



*Valves for the Water &
Waste Water Industries*

STEEL / CAST IRON / DUCTILE IRON

AWWA



BUTTERFLY VALVES



DUAL-PLATE
WAFER CHECK VALVES



SWING CHECK VALVES



ROTOCHECK VALVES



Manufacturing Facility in the city of Gomez Palacio, State of Durango, Mexico.



Manufacturing Facility in the city of Tepetzotlan, State of Mexico, Mexico.



Foundry Facility in the city of San Juan del Rio, State of Queretaro, Mexico.

Founded in 1842. Walworth has been in the forefront of American valve industry and recognized the world over for quality and dependability. Since its inception, Walworth's objective is to design and manufacture valves consistently to the latest industry and user specifications of superior quality, trouble free operation, long service life and user reliability. Industries of all process piping applications, such as Water and Waste Water, Petroleum, Petro-Chemical, Chemicals, Marine, Power, HVAC and other, have been more than satisfied with their investments in Walworth valves for they many varied applications.

Walworth's company owned casting facilities for steel, stainless, alloys, iron and bronze - and it's modern high-tech manufacturing facilities, assure it's customers of total quality from the inception, to the installation, and through the years of service life. This vertical integration control of manufacturing production gives Walworth the unique ability to produce a large variety of valve types, sizes, materials of construction, and total adherence to specifications such as: AWWA, API, ASTM, ANSI, ASME, MSS, and others, for the many various markets and applications. Each casting and manufacturing facility is ISO certified for total process control.

This type of experience and technical knowledge is very important for the worldwide Water and Waste Water market. The operators of potable water and waste water treatment plants are interested in having reliable equipment to work with every day.

Water plant owners must supply their customers with a finished product on a constant basis and cannot have interruptions due to faulty piping equipment - such as valves - that are not dependable; that's why they rely on Walworth Water Works AWWA butterfly and AWWA check valves. These operators are assured of durability, along with an ease of maintenance, for trouble free production.

Walworth Water Works AWWA Butterfly and Check valves are manufactured to the strict requirements of Specifications AWWA-C504 and AWWA -C508, respectively.

The butterfly valve product line is available in Classes 75 and 150 (A&B) with wafer, flanged and mechanical joint configurations. The user or specifier can also rely on the same adherence to high manufacturing principles for butterfly valves and check valves that are not found in these specifications, such as: Class 250 grooved-end butterfly valves; and, Class 250 tilting disc type and wafer style check valves. That same user / specifier has the availability of any materials of construction, due to the vertical integration, which has been a hallmark of the Walworth name for many, many years.

The next time that you are looking for a valve manufacturer that can supply the valve type, with the proper materials of construction, with the adherence to the industry (and your) specifications, with reliability and durability, and a valve that will just make your life easier - remember Walworth.

AWWA BUTTERFLY VALVES

SERVICE CHARACTERISTICS

- Open/close or Throttling
- Bubble Tight Bi-directional Seal
- Above Ground or Buried
- Manual or Automated Operation
- "A" Designation, Maximum Velocity 8 ft/sec
- "B" Designation, Maximum Velocity 16 ft/sec
- 360° Uninterrupted Seal
- Full AWWA C504 Compliance

DESIGN & MANUFACTURING FEATURES

- Hydrodynamic (eccentric) Disc reduces turbulence and pressure drop, reduces stress at maximum pressures, and allows instantaneous separation of seating surfaces, thereby reducing drag and seat distortion.
- Disc-Shaft connection is achieved through the use of tangential taper bolts of the same materials as the shaft.
- The thrust bearing assembly and leveler screw (provided on valves of 24" and larger) assures balance and centers the disc for minimum disc seat wear without galling, providing constant low torque requirements.
- Self-lubricated PTFE Phenolic-backed or nylon bearings in upper and lower trunions are designed for maximum load conditions and long life.
- Shaft seals are V-type non-asbestos packing, designed for heavy duty dynamic sealing requirements.
- The body disc ring of stainless steel, permanently affixed to the body, allows smooth flow through the valve diameter with self-cleaning action.

SEAT-The elastomer seat is trapezoidal and is firmly retained on the disc with a stainless steel disc ring and cap screws. The seat design allows for field adjustment along the full 360° circumference without dismantling the operator, disc or shaft. This can be done on 30" and larger valves without removing the valve from the pipeline.

BODY SEAT- Long, reliable seating surface life is assured by the 360° uninterrupted body seat of polished stainless steel, allowing for a smooth flow through the valve diameter with a self-cleaning action.

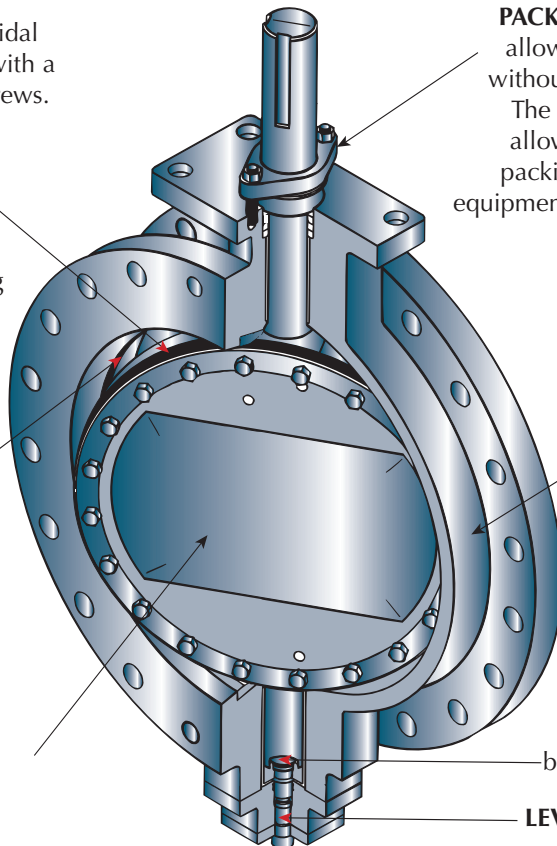
DISC- The hydrodynamic design of our disc produces minimum turbulence and low pressure drop and reduces stress at maximum differential pressure.

PACKING- The packing gland allows for ease of adjustment without removing the actuator. The gland can be adapted to allow for self-adjustment. All packing furnished in standard equipment is V-type non asbestos.

BODY- The standard butterfly valve body is of high strength cast iron and the dimensions meet the requirements of ANSI B16.1 Class 125 and all the requirements of AWWA C504.

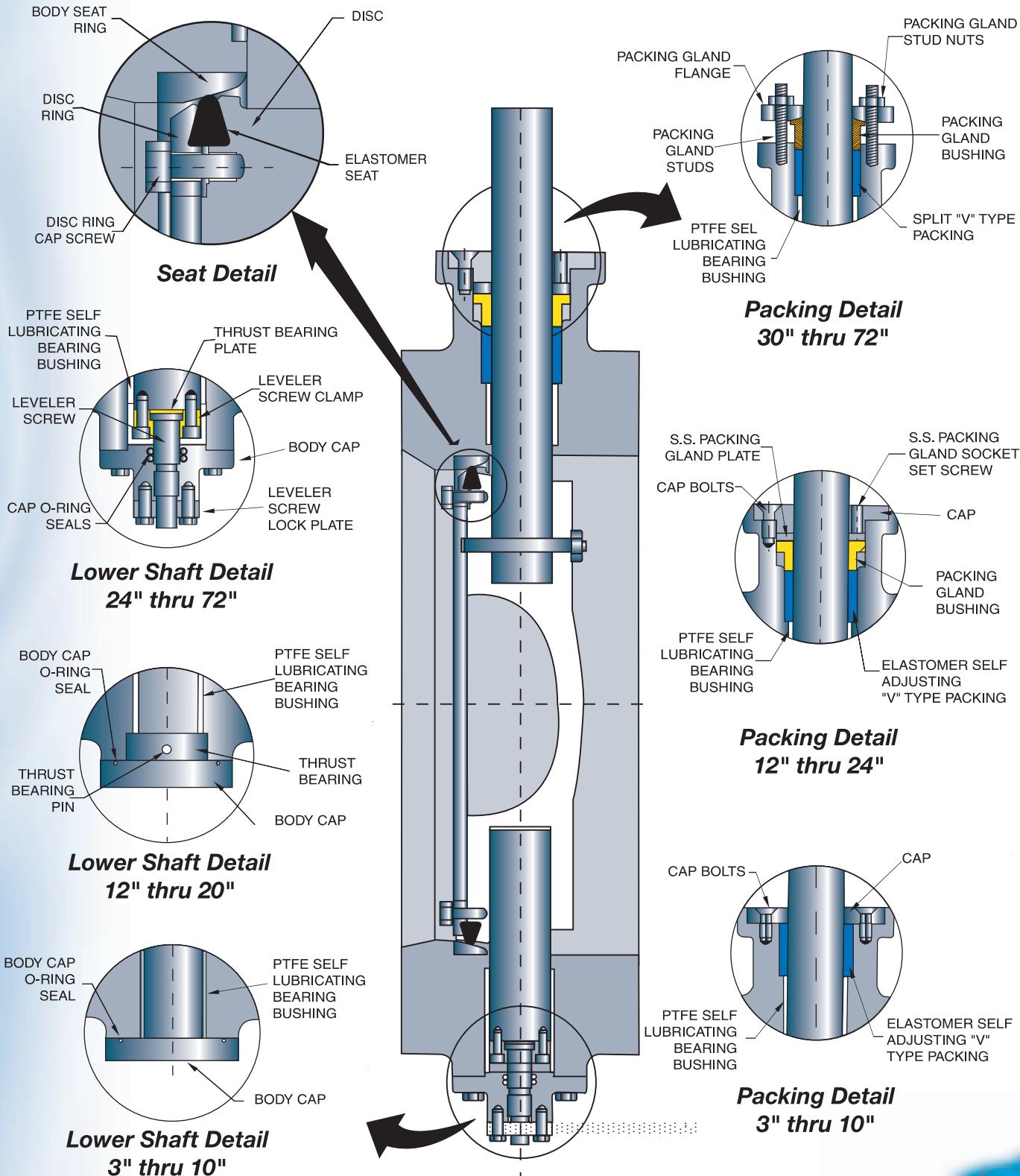
THRUST BEARING, provides true balance with minimal disc seat wear.

LEVELER SCREW, provided on 24" valves and larger.



DESIGN DETAILS

AWWA BUTTERFLY VALVES



FLANGED ENDS, SHORT BODY 3 TO 10 INCH SIZES

3 to 10 inch, Figure 2116 Class 150B & Figure 2117 Class 150A

AWWA BUTTERFLY VALVES

Specifications

- Short Body-Flanged
- Equipped With Traveling Nut or Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Stem Diameter in Accordance With AWWA C504
- Complies with AWWA C504

Service Features

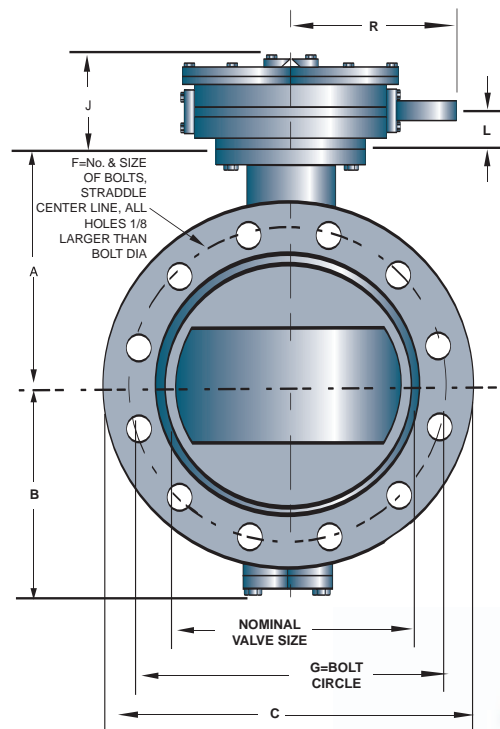
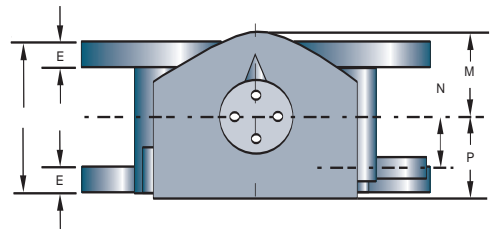
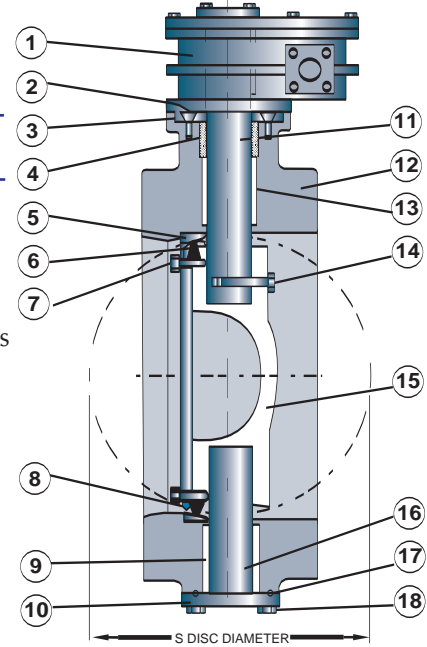
- Stainless Steel Body Seat
- Ease of Actuator Adaption
- High Strength Body & Disc
- 360° Uninterrupted Seal
- One Piece Shaft on 3, 4, & 6 inch sizes
- Stub Shaft (Two Separate Shafts) on 8 and 10 inch Sizes
- ANSI B16.1 Class 125 Flanges

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Packing Gland Flange Bolt	Steel	A 307 GR B
3	Packing Gland Flange	Galvanized Steel	A 108
4	Packing	Non Asb V-Type	Commercial
5	Body Seat Ring	Stainless Steel	A 167 304
6	Seat	Buna-N	Commercial
7	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
8	Disc Ring	Stainless Steel	A 167 Type 304
9	Lower Shaft Bearing	Reinforced PTFE	Commercial
10	Body Cap	Cast Iron	A 126 CL B
11	Upper Shaft	Stainless Steel	A 276 Type 304
12	Body	Cast Iron	A 126 CL B
13	Upper Shaft Bearing	Reinforced PTFE	Commercial
14	Disc Taper Bolt	Stainless Steel	A 276 Type 304
15	Disc	Ductile Iron	A 536 65-45-12
16	Lower Shaft	Stainless Steel	A 276 Type 304
17	Cap O-Ring	Buna-N	Commercial
18	Body Cap Hex Head Screw	Steel	A 307 GR B

DIMENSIONS IN INCHES

NOMINAL SIZE	3"	4"	6"	8"	10"
A	5.7	6.7	7.5	9.2	9.5
B	3.8	4.5	5.5	6.8	8.0
C	7.5	9.0	11.0	13.5	16
D	5.0	5.0	5.0	6.0	8.0
E	0.8	0.9	1.0	1.1	1.2
F	4	8	8	8	12
	5/8	5/8	3/4	3/4	7/8
G	6.0	7.5	9.5	11.8	14.3
J	3.3	3.3	3.3	3.3	3.3
L	1.5	1.5	1.5	1.8	1.8
M	1.6	1.6	1.6	2.1	2.1
N	1.4	1.4	1.4	1.7	1.7
P	3.1	3.1	3.1	3.9	3.9
R	7.5	7.5	7.5	7.6	7.6
S	3.0	3.5	5.0	7.0	9.0
ACTUATOR	ATV-00	ATV-00	ATV-00	ATV-0	ATV-1
WEIGHT (LBS)	40	50	79	134	209



FLANGED ENDS, SHORT BODY 12 TO 24 INCH SIZES

12 to 24 inch, Figure 2116 Class 150B & Figure 2117 Class 150A

AWWA BUTTERFLY VALVES

Specifications

- Short Body-Flanged
- Equipped With Traveling Nut or Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Stem Diameter in Accordance with AWWA C504
- Complies AWWA with C504

Service Features

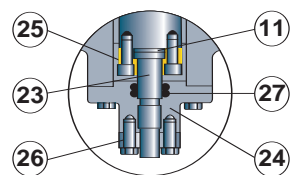
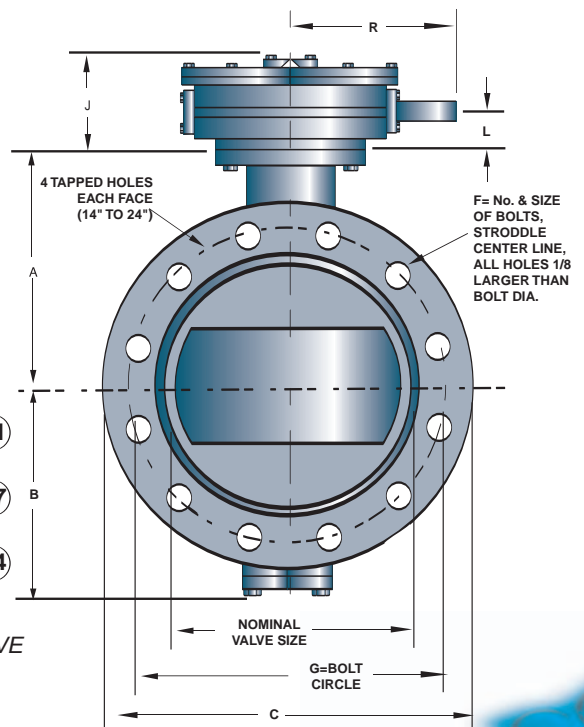
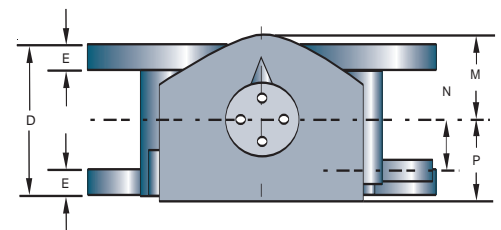
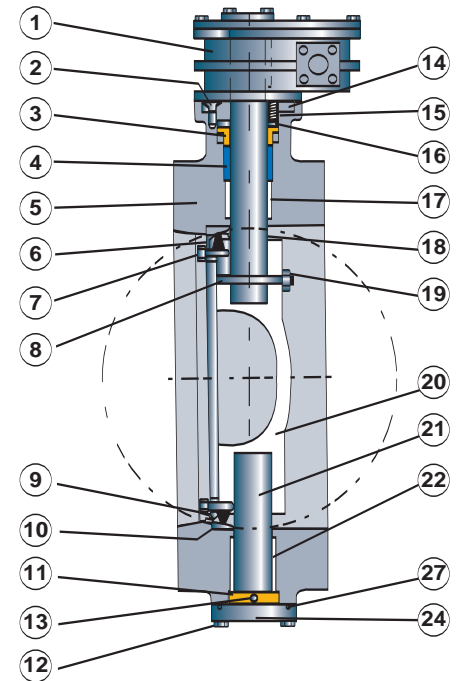
- Stainless Steel Body Seat
- Ease of Actuator Adaption
- High Strength Body & Disc
- 360° Uninterrupted Seal
- Stub Shaft (Two Separate Shafts)
- ANSI B16.1 Class 125 Flanges

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Packing Gland Flange Bolt	Steel	A 307 GR B
3	Packing Gland Bushing	Bronze	B 62
4	Packing	Non-Asb V-Type	Commercial
5	Body	Cast Iron	A 126 CL B
6	Seat	Buna-N	Commercial
7	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
8	Disc Taper Bolt	Stainless Steel	A 276 Type 304
9	Disc Ring	Stainless Steel	A 167 Type 304
10	Body Seat Ring	Stainless Steel	A 167 Type 304
11	Thrust Bearing	Bronze	B 62
12	Lock Plate Hex Head Screw	Steel	A 307 GR B
13	Thrust Bearing Pin	Stainless Steel	A 276 Type 304
14	Packing Gland Flange	Galvanized Steel	A 108
15	Adjusting Socket Set Screw	Stainless Steel	A 276 Type 304
16	Loading Ring	Stainless Steel	A 276 Type 304
17	Upper Shaft Bearing	Reinforced PTFE	Commercial
18	Upper Shaft	Stainless Steel	A 276 Type 304
19	Disc Taper Bolt Hex Nut	Stainless Steel	A 276 Type 304
20	Disc	Ductile Iron	A 536 65-45-12
21	Lower Shaft	Stainless Steel	A 276 Type 304
22	Lower Shaft Bearing	Reinforced PTFE	Commercial
23	Leveler Screw	Stainless Steel	A 276 Type 304
24	Body Cap	Cast Iron	A 126 CL B
25	Leveler Screw Clamp	Bronze	B 62
26	Leveler Screw Lock Plate	Cast Iron	A 126 CL B
27	Cap O-Ring	Buna-N	Commercial

DIMENSIONS IN INCHES

NOMINAL SIZE	12"	14"	16"	18"	20"	24"
A	10.9	13.3	14.0	15.3	16.6	19.1
B	10.7	12.4	13.7	15.1	16.5	21.3
C	19.0	21.0	23.5	25.0	27.5	32.0
D	8.0	8.0	8.0	8.0	8.0	8.0
E	1.3	1.4	1.4	1.6	1.7	1.8
F	12	12	16	18	20	20
	7/8	1.0	1.0	1 1/8	1 1/8	1 1/4
G	17.0	18.7	21.2	22.7	25.0	29.5
J	6.5	6.5	7.3	7.3	7.8	7.8
L	2.8	2.8	3.3	3.3	3.5	3.5
M	4.8	5.6	5.6	6.7	6.7	6.7
N	2.5	2.5	3.8	3.8	4.8	4.8
P	5.3	5.3	6.3	6.3	8.2	8.2
R	8.8	8.8	10.7	10.7	12.3	12.3
S	11.4	13.0	15.0	17.0	19.0	23.0
ACTUATOR	ATV-1	ATV-1	ATV-2	ATV-3	ATV-3	ATV-3
WEIGHT (LBS)	301	409	464	704	748	941



LEVELER SCREW
DETAIL FOR 24" VALVE

FLANGED ENDS, SHORT BODY 30 TO 72 INCH SIZES

30 to 72 inch, Figure 2110 Class 75B, Figure 2111 Class 75A, Figure 2116 Class 150B, Figure 2117 Class 150A

AWWA BUTTERFLY VALVES

Specifications

- Short Body-Flanged
- Equipped With Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Stem Diameter in Accordance with AWWA C504
- Complies with AWWA C504

Service Features

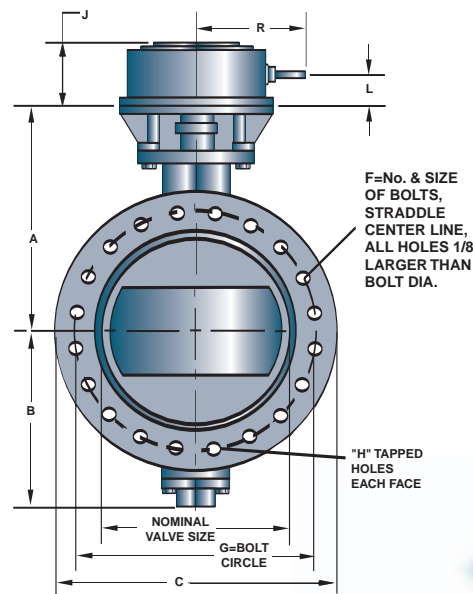
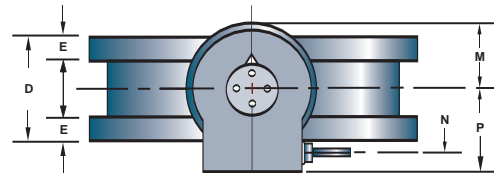
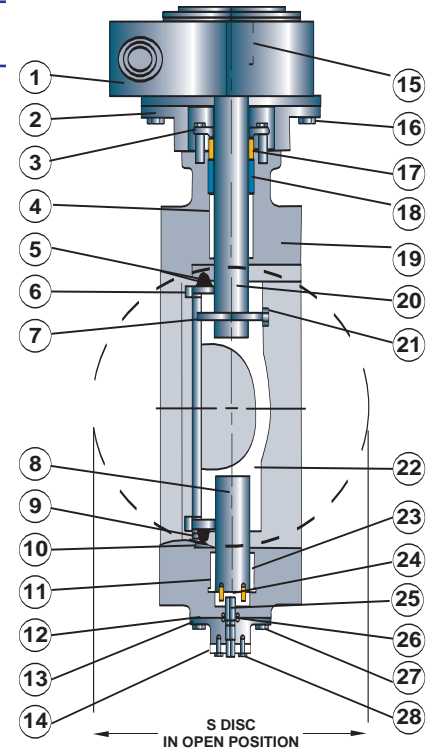
- Stainless Steel Body Seat
- Ease of Actuator Adaption
- Elastomer Seat Providing Watertight Seal
- 360° Uninterrupted Seal
- ANSI B16.1 Class 125 Flanges
- Stub Shaft (Two Separate Shafts)

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Operator Base	Cast Iron	A 126 CL B
3	Packing Gland Flange	Ductile Iron	A 536 65-45-12
4	Upper Shaft Bearing	Reinforced PTFE	Commercial
5	Seat	Buna-N	Commercial
6	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
7	Disc Taper Bolt	Stainless Steel	A 276 Type 304
8	Lower Shaft	Stainless Steel	A 276 Type 304
9	Disc Ring	Stainless Steel	A 167 Type 304
10	Body Seat Ring	Stainless Steel	A 167 Type 304
11	Leveler Screw Clamp	Bronze	B 62
12	Cap Gasket	Non-Asbestos	Commercial
13	Body Cap	Cast Iron	A 126 CL B
14	Leveler Screw Lock Plate	Cast Iron	A 126 CL B
15	Shaft Operator Key	Cold Rolled Steel	A 108 1018
16	Body Base Stud Hex Screw	Steel	A 307 GR B
17	Packing Gland	Bronze	B 62
18	Packing	Non Asb V-Type	Commercial
19	Body	Cast Iron	A 126 CL B
20	Upper Shaft	Stainless Steel	A 276 Type 304
21	Disc Taper Bolt Hex Nut	Stainless Steel	A 276 Type 304
22	Disc	Ductile Iron	A 536 65-45-12
23	Lower Shaft Bearing	Reinforced PTFE	Commercial
24	Thrust Bearing	Bronze	B 62
25	Leveler Screw	Stainless Steel	A 276 Type 304
26	Cap O-Ring	Buna-N	Commercial
27	Body Cap Hex Head Screw	Steel	A 307 GR B
28	Lock Plate Hex Head Screw	Steel	A 307 GR B

DIMENSIONS IN INCHES

NOMINAL SIZE	30"	36"	42"	48"	54"	60"	66"	72"
A	27.7	32.1	36.0	40.0	44.0	47.1	50.5	57.9
B	27.0	30.4	36.0	38.9	43.7	47.1	52.4	55.3
C	38.8	46.0	53.0	59.5	66.3	73.0	80.0	86.5
D	12.0	12.0	12.0	15.0	15.0	15.0	18.0	18.0
E	2.1	2.4	2.6	2.8	3.0	3.1	3.4	3.5
F	28	32	36	44	44	52	52	60
	1 1/4	1 1/2	1 1/2	1 1/2	1 3/4	1 3/4	1 3/4	1 3/4
G	36.0	42.8	49.5	56.0	62.8	69.3	76.0	82.5
H	4	4	4	8	8	8	8	8
J	8.6	10.2	10.2	10.8	10.8	12.7	12.7	12.7
L	4.1	4.8	4.8	5.0	5.0	6.3	6.3	6.3
M	8.0	9.4	9.4	10.5	10.5	13.1	13.1	13.1
N	6.0	7.8	7.8	9.8	9.8	13.0	13.0	13.0
P	9.0	12.1	12.1	14.4	14.4	18.1	18.1	18.1
R	10.6	14.0	14.0	14.3	14.3	18.5	18.5	18.5
S	29.1	34.9	41.2	47.0	52.9	59.0	65.0	70.8
ACTUATOR	OSM-3	OSM-4	OSM-4	OSM-5	OSM-5	OSM-6	OSM-6	OSM-6
WEIGHT (LBS)	1694	2728	3843	5280	7509	9726	10699	13332



FLANGED ENDS 3 TO 10 INCH SIZES

3 to 10 inch, Figure 2250 Class 250

AWWA BUTTERFLY VALVES

Specifications

- Equipped With Traveling Nut or Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Designed and Produced meeting the intent of AWWA C504

Service Features

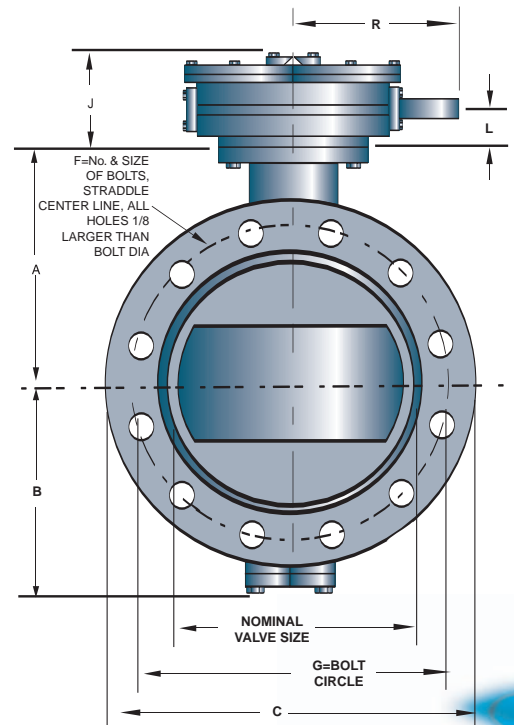
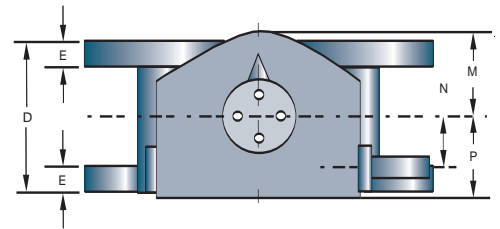
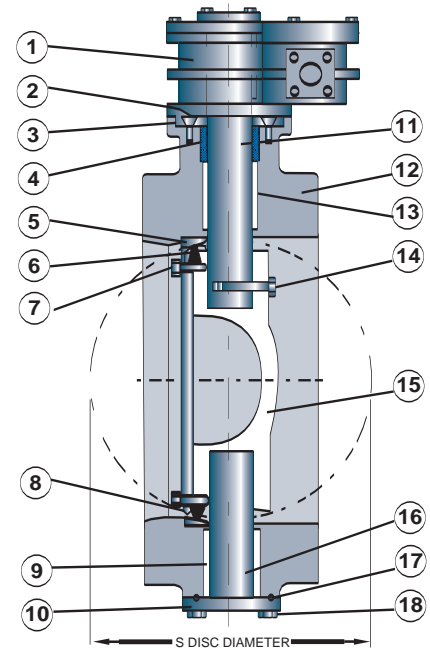
- Stainless Steel Body Seat
- Ease of Actuator Adaption
- High Strength Body & Disc
- 360° Uninterrupted Seal
- One Piece Shaft on 3, 4 & 6 inch sizes
- Stub Shaft (Two Separate Shafts) on 8 and 10 inch Sizes
- ANSI B16.1 Class 250 Flanges

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Packing Gland Flange Bolt	Steel	A 307 GR B
3	Packing Gland Flange	Galvanized Steel	A 108
4	Packing	Non Asb V-Type	Commercial
5	Body Seat Ring	Stainless Steel	A 167 Type 304
6	Seat	Buna-N	Commercial
7	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
8	Disc Ring	Stainless Steel	A 167 Type 304
9	Lower Shaft Bearing	Reinforced PTFE	Commercial
10	Body Cap	Ductile Iron	A 536 65-45-12
11	Upper Shaft	Stainless Steel	A 276 Type 304
12	Body	Ductile Iron	A 536 65-45-12
13	Upper Shaft Bearing	Reinforced PTFE	Commercial
14	Disc Bolt	Stainless Steel	A 276 Type 304
15	Disc	Ductile Iron	A 536 65-45-12
16	Lower Shaft	Stainless Steel	A 276 Type 304
17	Cap O-Ring	Buna-N	Commercial
18	Body Cap Hex Head Screw	Steel	A 307 GR B

DIMENSIONS IN INCHES

NOMINAL SIZE	3"	4"	6"	8"	10"
A	5.7	6.7	7.5	9.2	12.9
B	3.8	4.5	5.5	6.8	8.0
C	8.4	10.0	12.5	15.0	17.5
D	5.63	5.63	5.75	7.00	9.38
E	1.13	1.25	1.44	1.63	1.88
F	8	8	12	12	16
	3/4	3/4	3/4	7/8	1.0
G	6.62	7.88	10.63	13.00	15.25
J	3.3	3.3	3.3	3.3	6.4
L	1.5	1.5	1.5	1.8	3.1
M	1.6	1.6	1.6	2.1	4.8
N	1.4	1.4	1.4	1.7	2.5
P	3.1	3.1	3.1	3.9	4.8
R	7.5	7.5	7.5	7.6	6.8
S	3.0	3.5	5.0	7.0	9.0
ACTUATOR	ATV-00	ATV-00	ATV-00	ATV-0	OSM-0
WEIGHT (LBS)	52	64	91	141	252



FLANGED ENDS 12 TO 24 INCH SIZES

12 to 24 inch, 2250 Class 250

AWWA BUTTERFLY VALVES

Specifications

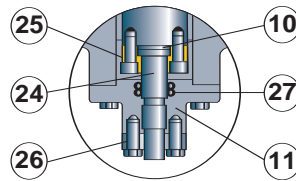
- Equipped With Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Designed and Produced meeting the intent of AWWA C504

Service Features

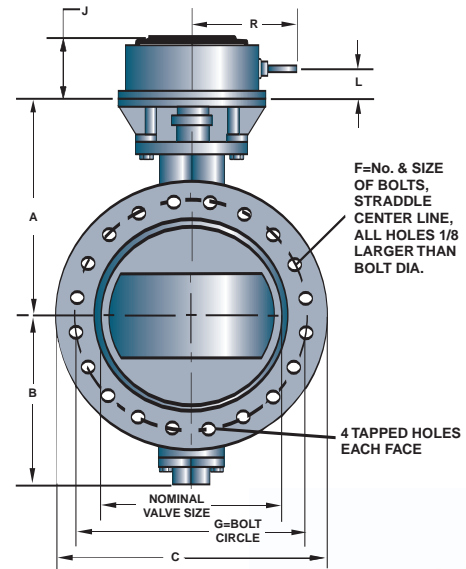
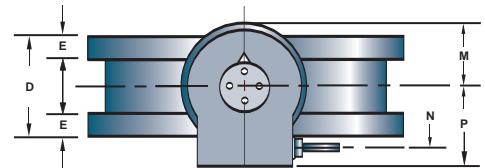
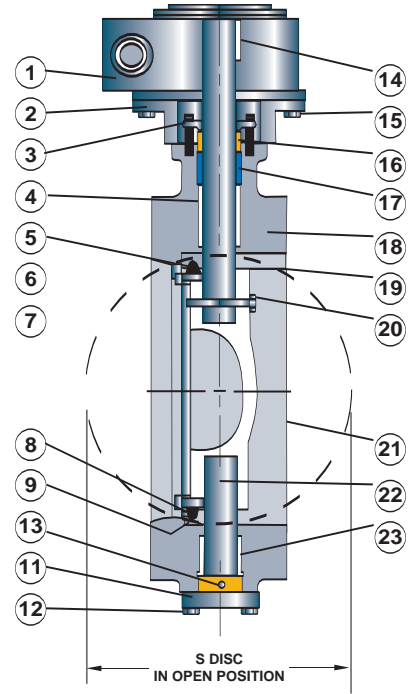
- Stainless Steel Body Seat
- Ease of Actuator Adaption
- Elastomer Seat Providing Watertight Seal
- 360° Uninterrupted Seal
- ASME /ANSI B16.1 Class 250 Flanges
- Stub Shaft (Two Separate Shafts)

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Operator Base	Cast Iron	A 126 CL B
3	Packing Gland Flange	Ductile Iron	A 536 65-45-12
4	Upper Shaft Bearing	Reinforced PTFE	Commercial
5	Seat	Buna-N	Commercial
6	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
7	Disc Taper Bolt	Stainless Steel	A 276 Type 304
8	Disc Ring	Stainless Steel	A 167 Type 304
9	Body Seat Ring	Stainless Steel	A 167 Type 304
10	Thrust Bearing	Bronze	B 62
11	Body Cap	Ductile Iron	A 536 65-46-12
12	Body Cap Hex Head Screw	Steel	A 307 GR B
13	Thrust Bearing Pin	Stainless Steel	A 276 Type 304
14	Shaft Operator Key	Cold Rolled Steel	A 108 1018
15	Body Base Stud Hex Screw	Steel	A 307 GR B
16	Packing Gland	Bronze	B 62
17	Packing	Non Asb V-Type	Commercial
18	Body	Ductile Iron	A 536 65-45-12
19	Upper Shaft	Stainless Steel	A 276 Type 304
20	Disc Taper Bolt Hex Nut	Stainless Steel	A 276 Type 304
21	Disc	Ductile Iron	A 536 65-45-12
22	Lower Shaft	Stainless Steel	A 276 Type 304
23	Lower Shaft Bearing	Reinforced PTFE	Commercial
24	Leveler Screw	Stainless Steel	A 276 Type 304
25	Leveler Screw Clamp	Bronze	B 62
26	Leveler Screw Lock Plate	Cast Iron	A 126 CL B
27	Cap O-Ring	Buna-N	Commercial



LEVELER SCREW
DETAIL FOR 24" VALVE



DIMENSIONS IN INCHES

NOMINAL SIZE	12"	14"	16"	18"	20"	24"
A	14.3	17.3	17.9	19.7	21.0	24.4
B	10.7	12.4	13.7	15.1	16.5	21.3
C	20.5	23.0	25.5	28.0	30.5	36.0
D	8.0	8.0	12.0	12.0	12.0	12.0
E	2.00	2.13	2.25	2.38	2.50	2.75
F	16	20	20	24	24	24
G	1 1/8	1 1/8	1 1/4	1 1/4	1 1/4	1 1/2
J	17.75	20.25	22.50	24.75	27.00	32.00
L	7.47	7.47	7.47	7.84	8.63	8.63
M	3.63	3.63	3.63	3.75	4.13	4.13
N	5.69	5.69	5.69	6.75	8.00	8.00
P	3.50	3.50	3.50	4.88	6.00	6.00
R	6.31	6.31	6.31	7.25	9.00	9.00
S	8.69	8.69	8.69	9.31	10.63	10.63
	11.4	13.0	15.0	17.0	19.0	23.0
ACTUATOR	OSM-1	OSM-1	OSM-1	OSM-2	OSM-3	OSM-3
WEIGHT (LBS)	351	440	614	896	1232	1782

FLANGED ENDS 30 TO 72 INCH SIZES

30 to 72 inch, Figure 2250 Class 250

AWWA BUTTERFLY VALVES

Specifications

- Equipped With Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Designed and Produced meeting the intent of AWWA C504
- ANSI / AWWA C207 Class E (275 psi) Flange Dimensions

Service Features

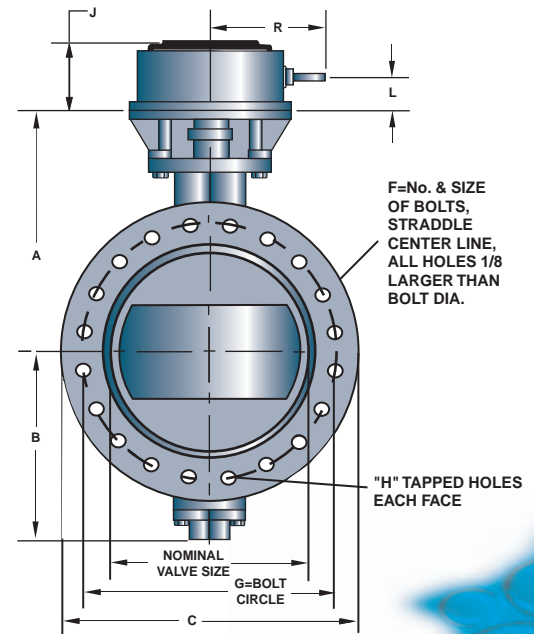
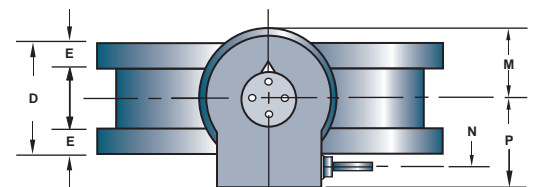
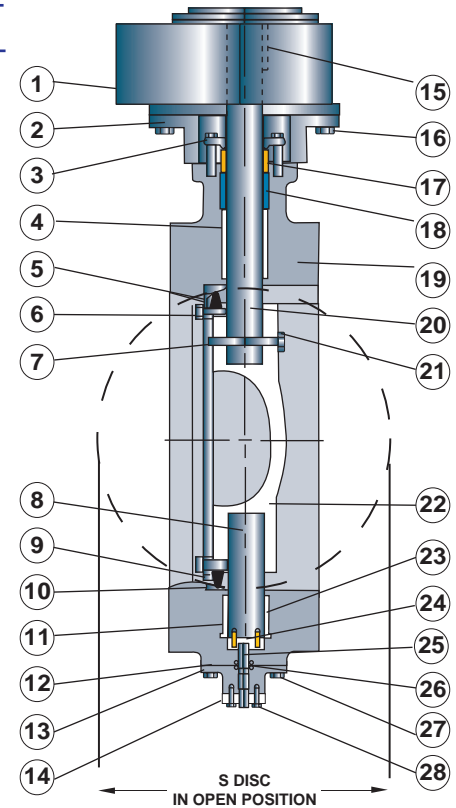
- Stainless Steel Body Seat
- Ease of Actuator Adaption
- Elastomer Seat Providing Watertight Seal
- 360° Uninterrupted Seal
- Stub Shaft (Two Separate Shafts)

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Operator Base	Cast Iron	A126 CL B
3	Packing Gland Flange	Ductile Iron	A 536 65-45-12
4	Upper Shaft Bearing	Reinforced PTFE	Commercial
5	Seat	Buna-N	Commercial
6	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
7	Disc Taper Bolt	Stainless Steel	A 276 Type 304
8	Lower Shaft	Stainless Steel	A 276 Type 304
9	Disc Ring	Stainless Steel	A 167 Type 304
10	Body Seat Ring	Stainless Steel	A 167 Type 304
11	Leveler Screw Clamp	Bronze	B 62
12	Cap Gasket	Non-Asbestos	Commercial
13	Body Cap	Ductile Iron	A 536 65-45-12
14	Leveler Screw Lock Plate	Cast Iron	A 126 CL B
15	Shaft Operator Key	Cold Rolled Steel	A 108 1018
16	Body Base Stud Hex Screw	Steel	A 307 GR B
17	Packing Gland	Bronze	B 62
18	Packing	Non Asb V-Type	Commercial
19	Body	Ductile Iron	A 536 65-45-42
20	Upper Shaft	Stainless Steel	A 276 Type 304
21	Disc Taper Bolt Hex Nut	Stainless Steel	A 276 Type 304
22	Disc	Ductile Iron	A 536 65-45-12
23	Lower Shaft Bearing	Reinforced PTFE	Commercial
24	Thrust Bearing	Bronze	B 62
25	Leveler Screw	Stainless Steel	A 276 Type 304
26	Cap O-Ring	Buna-N	Commercial
27	Body Cap Hex Head Screw	Steel	A 307 GR B
28	Lock Plate Hex Head Screw	Steel	A 307 GR B

DIMENSIONS IN INCHES

NOMINAL SIZE	30"	36"	42"	48"	54"	60"	66"	72"
A	27.7	32.1	36.0	40.0	44.0	47.1	50.5	57.9
B	27.0	30.4	36.0	38.9	43.7	47.1	52.4	55.3
C	38.8	46.0	53.0	59.5	66.3	73.0	80.0	86.5
D	15.0	15.0	15.0	15.0	15.0	15.0	18.0	18.0
E	3.00	3.38	3.69	4.00	3.00	3.13	3.38	3.50
F	28	32	36	40	44	52	52	60
	1 3/4	2.0	2.0	2.0	1 3/4	1 3/4	1 3/4	1 3/4
G	39.25	46.00	52.75	60.75	62.75	69.25	76.00	82.50
H	4	4	4	8	8	8	8	8
J	10.2	10.2	10.7	13.8	13.8	13.8	14.1	14.1
L	4.8	4.8	5.0	6.5	6.5	6.5	6.3	6.3
M	9.4	9.4	10.5	13.1	13.1	13.1	15.9	15.9
N	7.8	7.8	9.8	13.0	13.0	13.0	16.0	16.0
P	12.1	12.1	14.4	17.5	17.5	17.5	21.4	21.4
R	14.0	14.0	14.2	29.7	29.7	29.7	31.1	31.1
ACTUATOR	29.1	34.9	41.2	47.0	52.9	59.0	65.0	70.8
WEIGHT (LBS)	OSM-4	OSM-4	OSM-5	OSM-6	OSM-6	OSM-6	OSM-7	OSM-7M
	2360	3630	5052	6853	8260	10699	11769	14665



GROOVED ENDS 3 TO 10 INCH SIZES

3 to 10 inch, Figure 2709 Class 150B

AWWA BUTTERFLY VALVES

Specifications

- Grooved Ends
- Equipped With Traveling Nut or Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Stem Diameter in Accordance with AWWA C504
- Complies with AWWA C504

Service Features

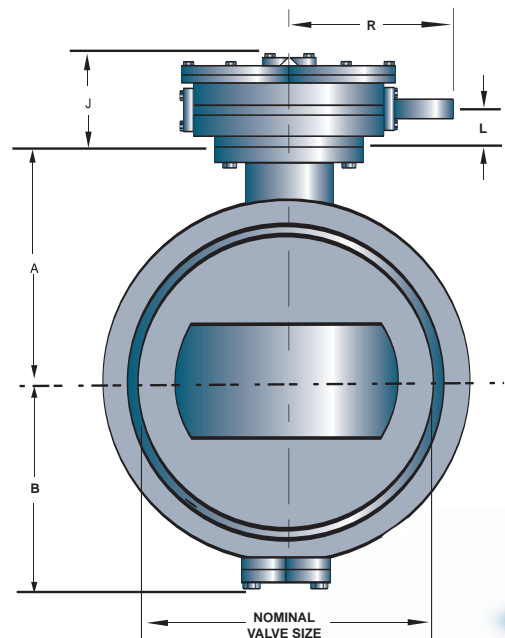
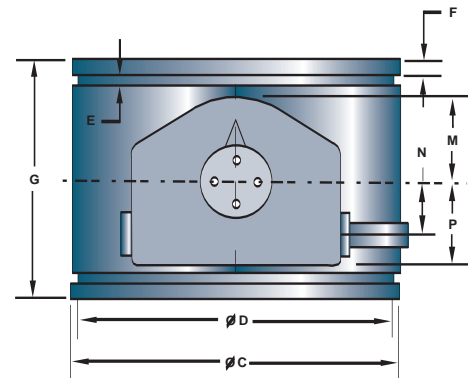
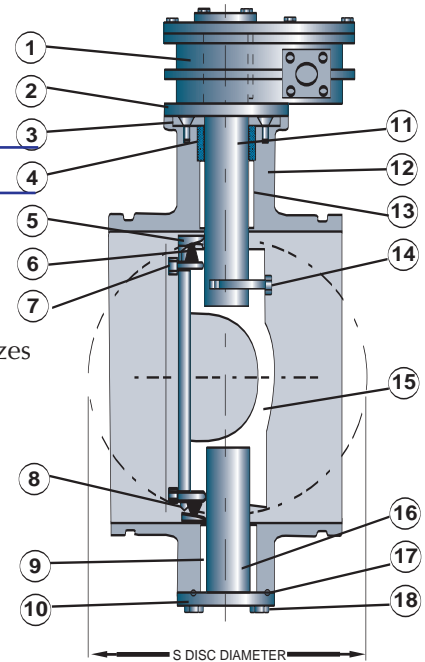
- Stainless Steel Body Seat
- Ease of Actuator Adaption
- High Strength Body & Disc
- 360° Uninterrupted Seal
- One Piece Shaft on 3, 4 & 6 inch sizes
- Stub Shaft (Two Separate Shafts) on 8 and 10 inch Sizes
- ANSI / AWWA C606 Grooved Ends

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Packing Gland Flange Bolt	Steel	A 307 GR B
3	Packing Gland Flange	Galvanized Steel	A 108
4	Packing	Non Asb V-Type	Commercial
5	Body Seat Ring	Stainless Steel	A 167 Type 304
6	Seat	Buna-N	Commercial
7	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
8	Disc Ring	Stainless Steel	A 167 Type 304
9	Lower Shaft Bearing	Reinforced PTFE	Commercial
10	Body Cap	Cast Iron	A 126 CL B
11	Upper Shaft	Stainless Steel	A 276 Type 304
12	Body	Ductile Iron	A 536 65-45-12
13	Upper Shaft Bearing	Reinforced PTFE	Commercial
14	Disc Taper Bolt	Stainless Steel	A 276 Type 304
15	Disc	Ductile Iron	A 536 65-45-12
16	Lower Shaft	Stainless Steel	A 276 Type 304
17	Cap O-Ring	Buna-N	Commercial
18	Body Cap Hex Head Screw	Steel	A 307 GR B

DIMENSIONS IN INCHES

NOMINAL SIZE	3"	4"	6"	8"	10"
A	5.7	6.7	7.5	9.2	9.5
B	3.8	4.5	5.5	6.8	8.0
C	3.96	4.80	6.90	9.05	11.10
D	3.72	4.56	6.65	8.78	10.81
E	0.38	0.38	0.38	0.50	0.50
F (RIGID RADIUS)	0.84	0.84	0.84	0.95	1.02
F (FLEX. RADIUS)	0.75	0.75	0.75	.88	0.94
G	6.00	6.00	6.50	8.00	8.00
J	3.3	3.3	3.3	3.3	3.3
L	1.5	1.5	1.5	1.8	1.8
M	1.6	1.6	1.6	2.1	2.1
N	1.4	1.4	1.4	1.7	1.7
P	3.1	3.1	3.1	3.9	3.9
R	7.5	7.5	7.5	7.6	7.6
S	3.0	3.5	5.0	7.0	9.0
ACTUATOR	ATV-00	ATV-00	ATV-00	ATV-0	ATV-0
WEIGHT (LBS)	33	42	63	114	215



GROOVED ENDS 12 TO 30 INCH SIZES

12 to 30 inch, Figure 2709 Class 150B

AWWA BUTTERFLY VALVES

Specifications

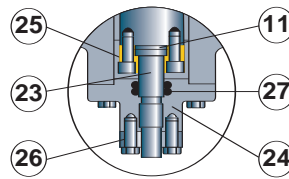
- Grooved Ends
- Equipped With Traveling Nut or Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Stem Diameter in Accordance with AWWA C504
- Complies with AWWA C504

Service Features

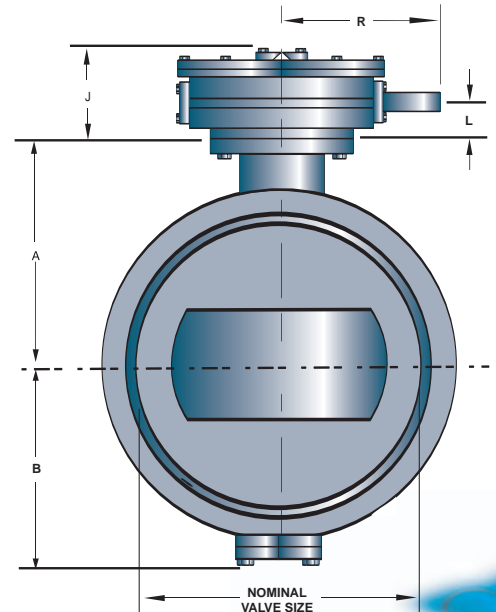
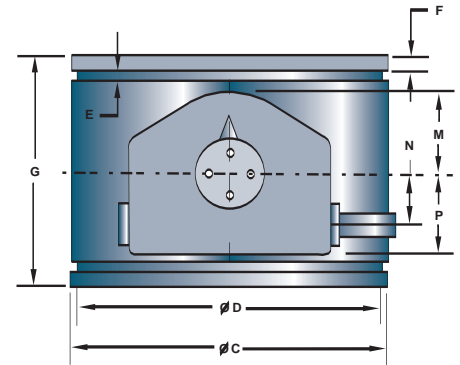
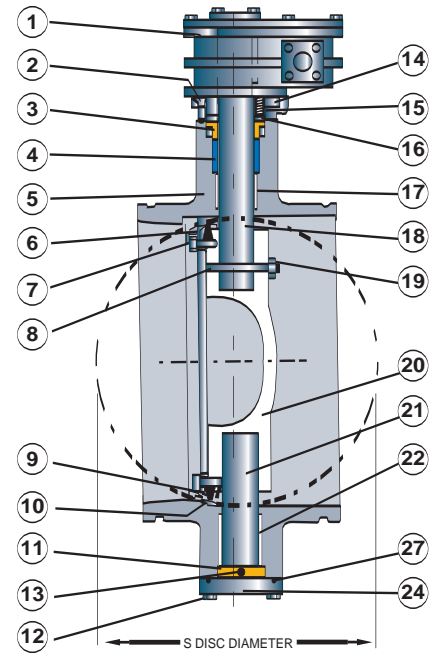
- Stainless Steel Body Seat
- Ease of Actuator Adaption
- High Strength Body & Disc
- 360° Uninterrupted Seal
- Stub Shaft (Two Separate Shafts)
- ANSI / AWWA C606 Grooved Ends

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Packing Gland Flange Bolt	Steel	A 307 GR B
3	Packing Gland Bushing	Bronze	B 62
4	Packing	Non Asb V-Type	Commercial
5	Body	Ductile Iron	A 536 65-45-12
6	Seat	Buna-N	Commercial
7	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
8	Disc Taper Bolt	Stainless Steel	A 276 Type 304
9	Disc Ring	Stainless Steel	A 167 Type 304
10	Body Seat Ring	Stainless Steel	A 167 Type 304
11	Thrust Bearing	Bronze	B 62
12	Lock Plate Hex Head Screw	Steel	A 307 GR B
13	Thrust Bearing Pin	Stainless Steel	A 276 Type 304
14	Packing Gland Flange	Galvanized Steel	A 108
15	Adjusting Socket Set Screw	Stainless Steel	A 276 Type 304
16	Loading Ring	Stainless Steel	A 276 Type 304
17	Upper Shaft Bearing	Reinforced PTFE	Commercial
18	Upper Shaft	Stainless Steel	A 276 Type 304
19	Disc Taper Bolt Hex Nut	Stainless Steel	A 276 Type 304
20	Disc	Ductile Iron	A 536 65-45-12
21	Lower Shaft	Stainless Steel	A 276 Type 304
22	Lower Shaft Bearing	Reinforced PTFE	Commercial
23	Leveler Screw	Stainless Steel	A 276 Type 304
24	Body Cap	Cast Iron	A 126 CL B
25	Leveler Screw Clamp	Bronze	B 62
26	Leveler Screw Lock Plate	Cast Iron	A 126 CL B
27	Cap O-Ring	Buna-N	Commercial



LEVELER SCREW DETAIL FOR 24" & 30" VALVE



DIMENSIONS IN INCHES

NOMINAL SIZE	12"	14"	16"	18"	20"	24"	30"
A	10.9	13.3	14.0	15.3	16.6	19.1	19.1
B	10.7	12.4	13.7	15.1	16.5	21.3	21.3
C	13.20	15.30	17.40	19.50	21.60	25.80	32.00
D	12.91	14.97	17.06	19.13	21.22	25.41	31.55
E	0.50	0.63	0.63	0.63	0.63	0.63	0.75
F (RIGID RADIUS)	1.02	1.02	1.34	1.34	1.34	1.34	1.63
F (FLEX RADIUS)	0.94	0.94	1.19	1.19	1.19	1.19	1.38
G	8.00	9.00	10.00	10.00	10.00	11.00	13.00
J	6.5	6.5	7.3	7.3	7.8	7.8	7.8
L	2.8	2.8	3.3	3.3	3.5	3.5	3.5
M	2.4	2.4	3.0	3.0	3.4	3.4	3.4
N	2.5	2.5	3.8	3.8	4.8	4.8	4.8
P	5.3	5.3	6.3	6.3	8.2	8.2	8.2
R	8.8	8.8	10.7	10.7	12.3	12.3	12.3
S	11.4	13.0	15.0	17.0	19.0	23.0	23.0
ACTUATOR	ATV-1	ATV-1	ATV-2	ATV-2	ATV-3	ATV-3	ATV-3
WEIGHT (LBS)	260	370	453	690	730	900	1670

MECHANICAL JOINT 3 TO 10 INCH SIZES

3 to 10 inch, Figure 2118 Class 150B

AWWA BUTTERFLY VALVES

Specifications

- Mechanical Joint Ends to AWWA C110
- Equipped With Traveling Nut or Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Stem Diameter in Accordance With AWWA C504
- Complies with AWWA C504

Service Features

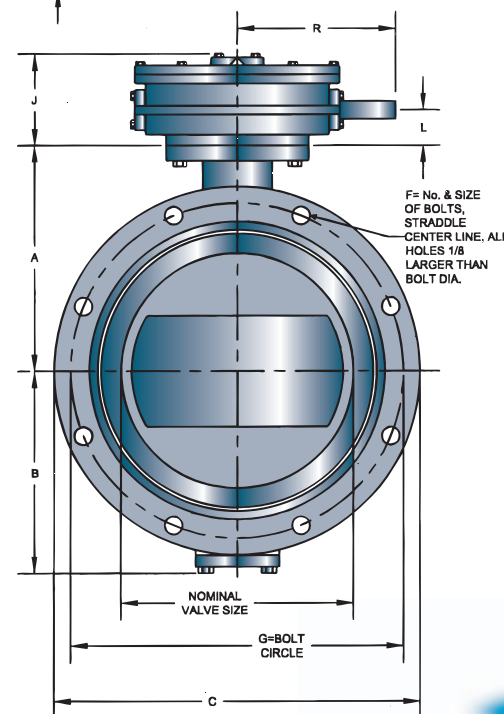
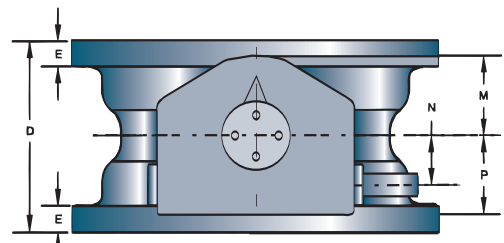
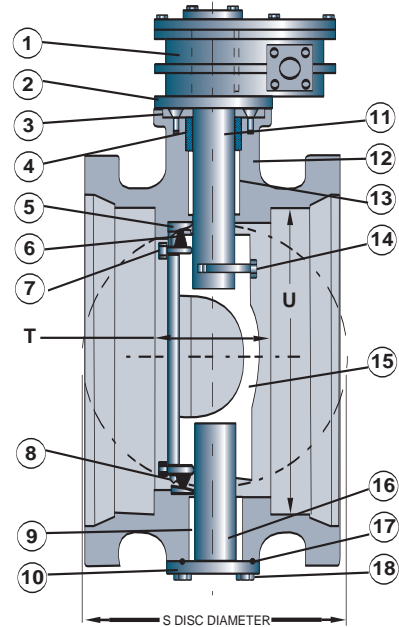
- Stainless Steel Body Seat
- Ease of Actuator Adaption
- High Strength Body & Disc
- 360° Uninterrupted Seal
- One Piece Shaft on 3, 4 & 6 Inch sizes
- Stub Shaft (Two Separate Shafts) on 8 and 10 Inch Sizes

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Packing Gland Flange Bolt	Steel	A 307 GR B
3	Packing Gland Flange	Galvanized Steel	A 108
4	Packing	Non Asb V-Type	Commercial
5	Body Seat Ring	Stainless Steel	A 167 Type 304
6	Seat	Buna-N	Commercial
7	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
8	Disc Ring	Stainless Steel	A 167 Type 304
9	Lower Shaft Bearing	Reinforced PTFE	Commercial
10	Body Cap	Cast Iron	A 126 CL B
11	Upper Shaft	Stainless Steel	A 276 Type 304
12	Body	Cast Iron	A 126 CL B
13	Upper Shaft Bearing	Reinforced PTFE	Commercial
14	Disc Tapper Bolt	Stainless Steel	A 276 Type 304
15	Disc	Ductile Iron	A 536 65-45-12
16	Lower Shaft	Stainless Steel	A 276 Type 304
17	Cap O-Ring	Buna-N	Commercial
18	Lock Plate Hex Head Screw	Steel	A 307 GR B

DIMENSIONS IN INCHES

NOMINAL SIZE	3"	4"	6"	8"	10"
A	5.7	6.7	7.5	9.3	9.5
B	3.8	4.6	5.6	6.8	8.0
C	7.7	9.1	11.1	13.5	15.7
D	8.5	8.5	8.5	8.6	9.3
E	0.9	1.0	1.1	1.1	1.2
F	4	4	6	6	8
	5/8	3/4	3/4	3/4	3/4
G	6.2	7.5	9.5	11.8	14.0
J	3.3	3.3	3.3	3.3	3.3
L	1.5	1.5	1.5	1.8	1.8
M	1.6	1.6	1.6	2.1	2.1
N	1.4	1.4	1.4	1.7	1.7
P	3.1	3.1	3.1	3.9	3.9
R	7.5	7.5	7.5	7.6	7.6
S	3.0	3.5	5.0	7.0	9
T	3.5	3.5	3.5	3.6	4.3
U	4.0	4.9	7.0	9.1	11.2
ACTUATOR	ATV-00	ATV-00	ATV-00	ATV-0	ATV-0
WEIGHT (LBS)	47	59	84	132	219



MECHANICAL JOINT 12 TO 24 INCH SIZES

12 to 24 inch, Figure 2118 Class 150B

AWWA BUTTERFLY VALVES

Specifications

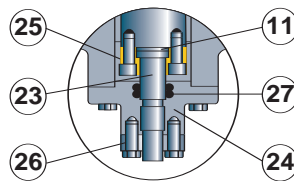
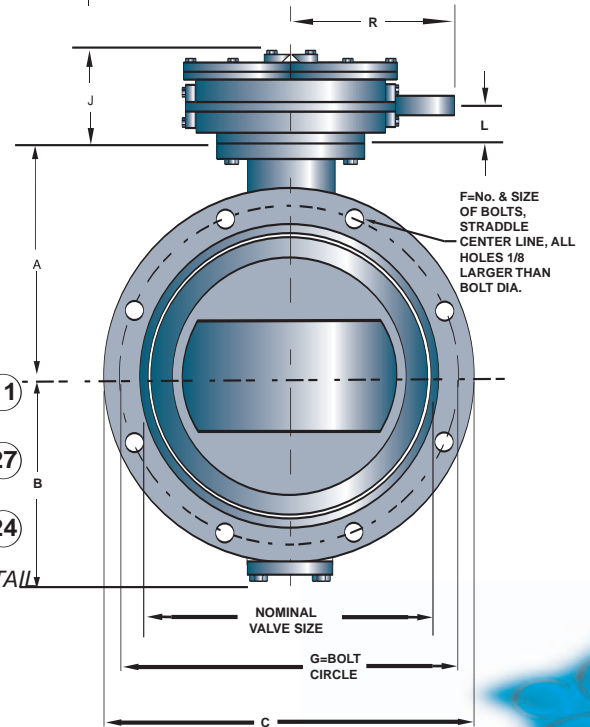
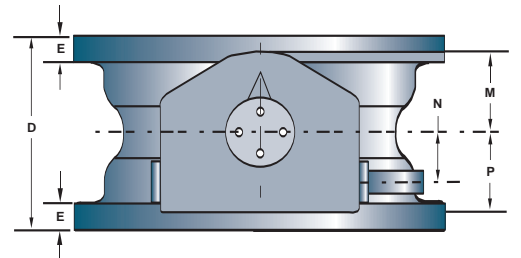
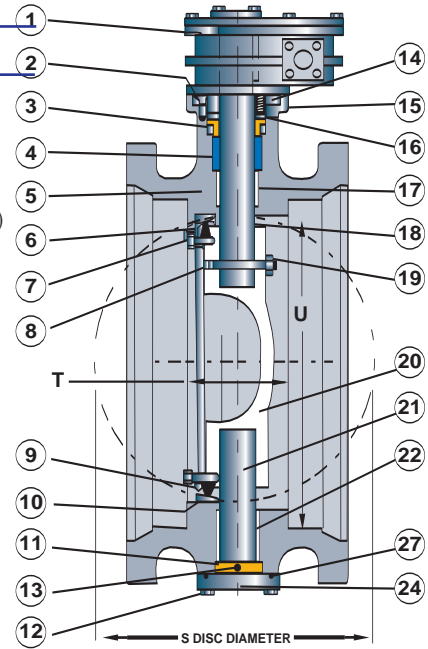
- Mechanical Joint Ends to AWWA C110
- Equipped With Traveling Nut Actuator or Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Stem Diameter in Accordance with AWWA C504
- Complies with AWWA C504

Service Features

- Stainless Steel Body Seat
- Ease of Actuator Adaption
- High Strength Body & Disc
- 360° Uninterrupted Seal
- Stub Shafts (Two Separate Shafts)

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Packing Gland Flange Bolt	Steel	A 307 GR B
3	Packing Gland Bushing	Bronze	B 62
4	Packing	Non-Asb V-Type	Commercial
5	Body	Cast Iron	A 126 CL B
6	Seat	Buna-N	Commercial
7	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
8	Disc Taper Bolt	Stainless Steel	A 276 Type 304
9	Disc Ring	Stainless Steel	A 167 Type 304
10	Body Seat Ring	Stainless Steel	A 167 Type 304
11	Thrust Bearing	Bronze	B 62
12	Lock Plate Hex Head Screw	Steel	A 307 GR B
13	Thrust Bearing Pin	Stainless Steel	A 276 Type 304
14	Packing Gland Flange	Steel	A 36
15	Adjusting Socket Set Screw	Stainless Steel	A 276 Type 304
16	Loading Ring	Stainless Steel	A 276 Type 304
17	Upper Shaft Bearing	Reinforced PTFE	Commercial
18	Upper Shaft	Stainless Steel	A 276 Type 304
19	Disc Taper Bolt Hex Nut	Stainless Steel	A 276 Type 304
20	Disc	Ductile Iron	A 536 65-45-12
21	Lower Shaft	Stainless Steel	A 276 Type 304
22	Lower Shaft Bearing	Reinforced PTFE	Commercial
23	Leveler Screw	Steel	A 307 GR B
24	Body Cap	Cast Iron	A 126 CL B
25	Leveler Screw Clamp	Bronze	B 62
26	Leveler Screw Lock Plate	Cast Iron	A 126 CL B
27	Cap O-Ring	Buna-N	Commercial



LEVELER SCREW DETAIL FOR 24" VALVE

DIMENSIONS IN INCHES

NOMINAL						
SIZE	12"	14"	16"	18"	20"	24"
A	10.9	13.3	14.0	15.3	16.6	19.1
B	10.7	12.4	13.7	15.1	16.5	21.3
C	17.9	20.3	22.5	23.3	27.1	31.4
D	9.3	11.5	12.0	12.3	12.5	13.3
E	1.3	1.3	1.4	1.4	1.5	1.6
F	8	10	12	12	14	16
	3/4	3/4	3/4	3/4	3/4	3/4
G	16.25	18.75	21.0	23.25	25.50	30.00
J	6.5	6.5	7.3	7.3	7.8	7.8
L	2.8	2.8	3.3	3.3	3.5	3.5
M	2.4	2.4	3.0	3.0	3.4	3.4
N	2.5	2.5	3.8	3.8	4.8	4.8
P	5.3	5.3	6.3	6.3	8.2	8.2
R	8.8	8.8	10.7	10.7	12.3	12.3
S	11.4	13.0	15.0	17.0	19.0	23.0
T	4.25	4.50	5.00	5.25	5.50	6.25
U	13.30	15.44	17.54	19.64	21.73	25.94
ACTUATOR	ATV-1	ATV-1	ATV-2	ATV-2	ATV-3	ATV-3
WEIGHT (LBS)	288	367	495	656	756	941

MECHANICAL JOINT 30 TO 42 INCH SIZES

30 to 42 inch, Figure 2118, Class 150B

AWWA BUTTERFLY VALVES

Specifications

- Mechanical Joint Ends to AWWA C110
- Equipped With Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Stem Diameter in Accordance with AWWA C504
- Complies with AWWA C504

Service Features

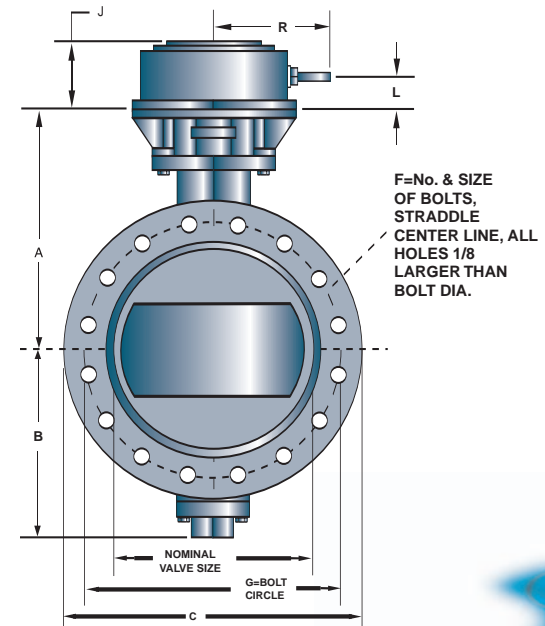
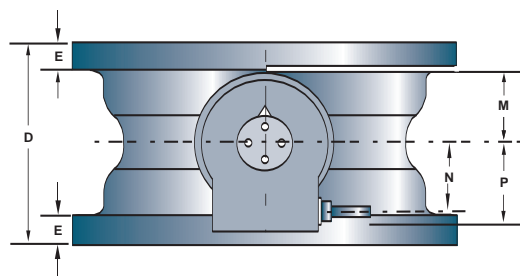
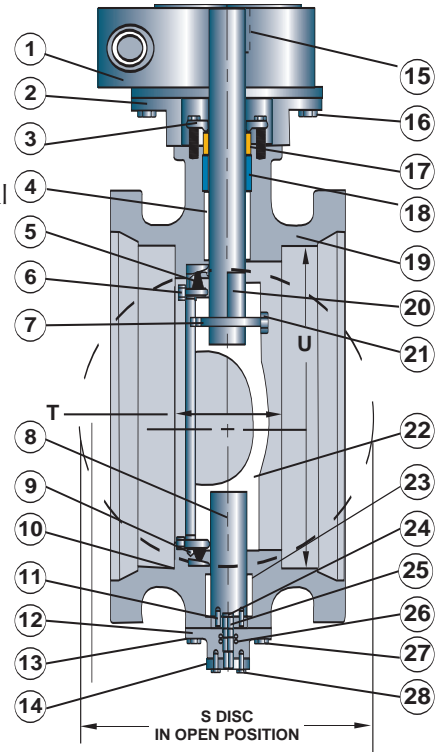
- Stainless Steel Body Seat
- Ease of Actuator Adaption
- Elastomer Seat Providing Watertight Seal
- 360° Uninterrupted Seal
- Stub Shaft (Two Separate Shafts)

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Operator Base	Cast Iron	A 126 CL B
3	Packing Gland Flange	Ductile Iron	A 536 65-45-12
4	Upper Shaft Bearing	Reinforced PTFE	Commercial
5	Seat	Buna-N	Commercial
6	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
7	Disc Taper Bolt	Stainless Steel	A 276 Type 304
8	Lower Shaft	Stainless Steel	A 276 Type 304
9	Disc Ring	Stainless Steel	A 167 Type 304
10	Body Seat Ring	Stainless Steel	A 167 Type 304
11	Leveler Screw Clamp	Bronze	B 62
12	Cap Gasket	Non-Asbestos	Commercial
13	Body Cap	Cast Iron	A 126 CL B
14	Leveler Screw Lock Plate	Cast Iron	A 126 CL B
15	Shaft Operator Key	Cold Rolled Steel	A 108 1018
16	Body Base Stud Hex Screw	Steel	A 307 GR B
17	Packing Gland	Bronze	B 62
18	Packing	Non Asb V-Type	Commercial
19	Body	Cast Iron	A 126 CL B
20	Upper Shaft	Stainless Steel	A 276 Type 304
21	Disc Taper Bolt Hex Nut	Stainless Steel	A 276 Type 304
22	Disc	Ductile Iron	A 536 65-45-12
23	Lower Shaft Bearing	Reinforced PTFE	Commercial
24	Thrust Bearing	Bronze	B 62
25	Leveler Screw	Steel	A 307 GR B
26	Cap O-Ring	Buna-N	Commercial
27	Body Cap Hex Head Screw	Steel	A 307 GR B
28	Lock Plate Hex Head Screw	Steel	A 307 GR B

DIMENSIONS IN INCHES

NOMINAL SIZE	30"	36"	42"
A	27.7	32.1	36.0
B	27.0	30.4	36.0
C	39.1	46.0	53.1
D	18.0	22.0	22.0
E	1.8	2.0	2.0
F	16	20	28
	1.0	1.0	1.25
G	36.93	43.75	50.63
J	8.6	10.2	10.2
L	4.1	4.8	4.8
M	8.0	9.4	9.4
N	6.0	7.8	7.8
P	9.0	12.1	12.1
R	10.6	14.0	14.0
S	29.1	34.9	41.0
T	10.0	14.0	14.0
U	32.17	38.47	44.67
ACTUATOR	OSM-3	OSM-4	OSM-4
WEIGHT (LBS)	1694	2728	4217



WAFER BODY 3 TO 10 INCH SIZES

3 to 10 inch, Figure 2114 Class 150B

AWWA BUTTERFLY VALVES

Specifications

- Wafer Body
- Equipped With Traveling Nut or Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Stem Diameter in Accordance With AWWA C504
- Complies with AWWA C504

Service Features

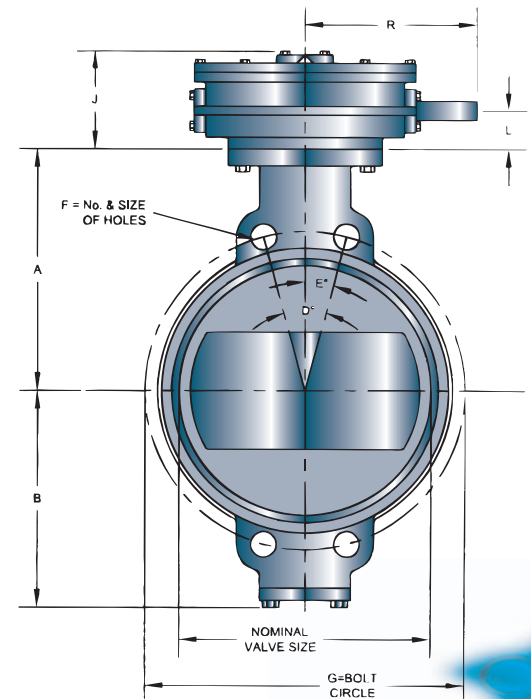
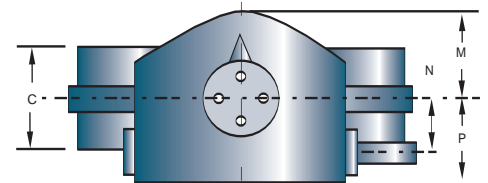
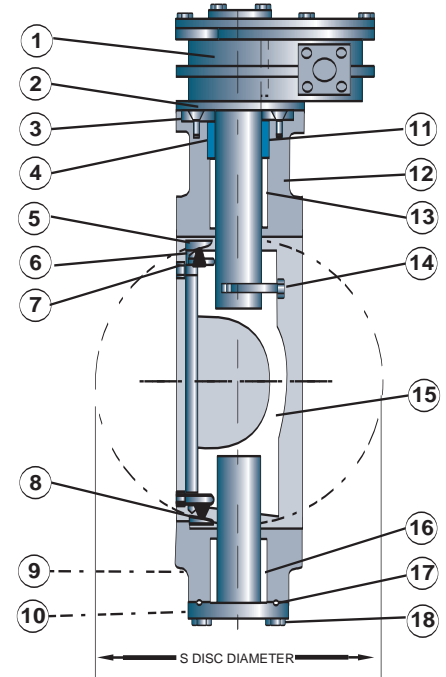
- Stainless Steel Body Seat
- Ease of Actuator Adaption
- High Strength Body & Disc
- 360° Uninterrupted Seal
- One Piece Shaft on 3, 4 & 6 inch sizes
- Stub Shaft (Two Separate Shafts) on 8 and 10 inch Sizes

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Packing Gland Flange Bolt	Steel	A 307 GR B
3	Packing Gland Flange	Galvanized Steel	A 108
4	Packing	Non Asb V-Type	Commercial
5	Body Seat Ring	Stainless Steel	A 167 Type 304
6	Seat	Buna-N	Commercial
7	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
8	Disc Ring	Stainless Steel	A 167 Type 304
9	Lower Shaft Bearing	Reinforced PTFE	Commercial
10	Body Cap	Cast Iron	A 126 CL B
11	Upper Shaft	Stainless Steel	A 276 Type 304
12	Body	Cast Iron	A 126 CL B
13	Upper Shaft Bearing	Reinforced PTFE	Commercial
14	Disc Taper Bolt	Stainless Steel	A 276 Type 304
15	Disc	Ductile Iron	A 536 65-45-12
16	Lower Shaft	Stainless Steel	A 276 Type 304
17	Cap O-Ring	Buna-N	Commercial
18	Body Cap Hex Head Screw	Steel	A 307 GR B

DIMENSIONS IN INCHES

NOMINAL SIZE	3"	4"	6"	8"	10"
A	5.7	6.7	7.5	9.2	9.5
B	3.8	4.5	5.5	6.8	8.0
C	2.0	2.25	2.81	2.94	3.12
D	-	45°	45°	45°	30°
E	-	22.5°	22.5°	22.5°	15°
F	-	4	4	4	4
	-	3/4	7/8	7/8	1.0
G	-	7.5	9.5	11.8	14.3
J	3.3	3.3	3.3	3.3	3.3
L	1.5	1.5	1.5	1.8	1.8
M	1.6	1.6	1.6	2.1	2.1
N	1.4	1.4	.4	1.7	1.7
P	3.1	3.1	3.1	3.9	3.9
R	7.5	7.5	7.5	7.6	7.6
S	3.0	3.5	5.0	7.0	9.0
ACTUATOR	ATV 00	ATV 00	ATV 00	ATV 0	ATV 0
WEIGHT (LBS)	32	35	54	95	173



WAFER BODY 12 TO 24 INCH SIZES

12 to 24 inch, Figure 2114 Class 150B

AWWA BUTTERFLY VALVES

Specifications

- Wafer Body
- Equipped With Traveling Nut or Worm Gear Actuator
- Non-Asbestos V-Type Packing
- Stem Diameter in Accordance With AWWA C504
- Complies with AWWA C504

Service Features

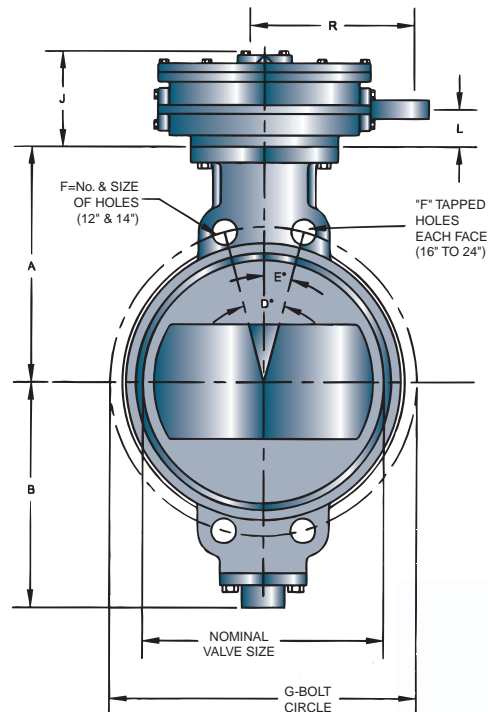
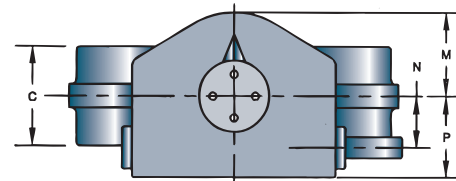
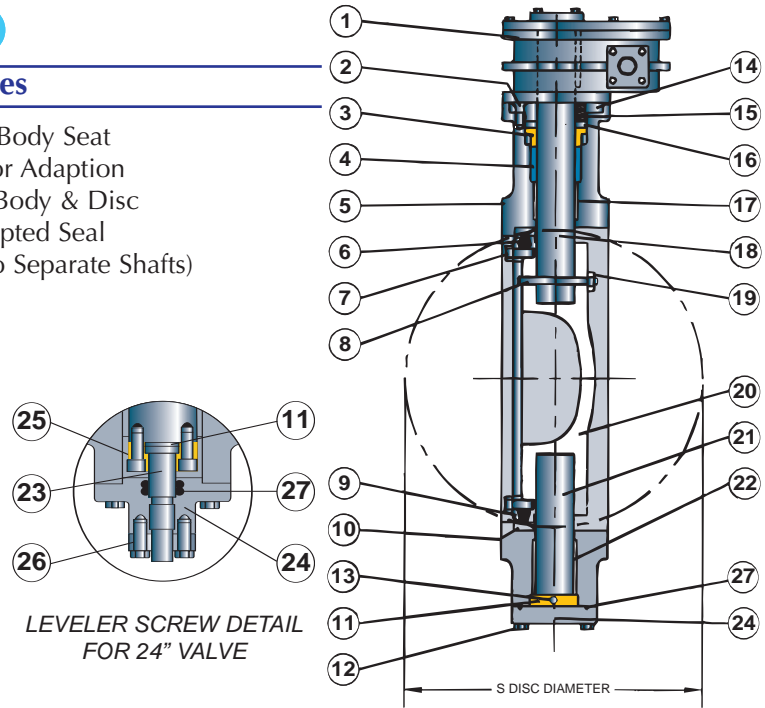
- Stainless Steel Body Seat
- Ease of Actuator Adaption
- High Strength Body & Disc
- 360° Uninterrupted Seal
- Stub Shaft (Two Separate Shafts)

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Actuator		
2	Packing Gland Flange Bolt	Steel	A 307 GR B
3	Packing Gland Bushing	Bronze	B 62
4	Packing	Non Asb V-Type	Commercial
5	Body	Cast Iron	A 126 CL B
6	Seat	Buna-N	Commercial
7	Disc Ring Cap Screw	Stainless Steel	A 276 Type 304
8	Disc Taper Bolt	Stainless Steel	A 276 Type 304
9	Disc Ring	Stainless Steel	A 167 Type 304
10	Body Seat Ring	Stainless Steel	A 167 Type 304
11	Thrust Bearing	Bronze	B 62
12	Lock Plate Hex Head Screw	Steel	A 307 GR B
13	Thrust Bearing Pin	Stainless Steel	A 276 Type 304
14	Packing Gland Flange	Galvanized Steel	A 108
15	Adjusting Socket Set Screw	Stainless Steel	A 276 Type 304
16	Loading Ring	Stainless Steel	A 276 Type 304
17	Upper Shaft Bearing	Reinforced PTFE	Commercial
18	Upper Shaft	Stainless Steel	A 276 Type 304
19	Disc Taper Bolt Hex Nut	Stainless Steel	A 276 Type 304
20	Disc	Ductile Iron	A 536 65-45-12
21	Lower Shaft	Stainless Steel	A 276 Type 304
22	Lower Shaft Bearing	Reinforced PTFE	Commercial
23	Leveler Screw	Stainless Steel	A 276 Type 304
24	Body Cap	Cast Iron	A 126 CL B
25	Leveler Screw Clamp	Bronze	B 62
26	Leveler Screw Lock Plate	Cast Iron	A 126 CL B
27	Cap O-Ring	Buna-N	Commercial

DIMENSIONS IN INCHES

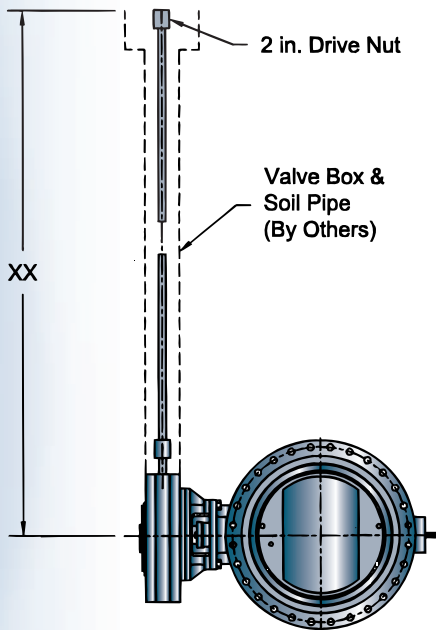
NOMINAL SIZE	12"	14"	16"	18"	20"	24"
A	10.9	13.3	14.0	15.3	16.6	19.1
B	10.7	12.4	13.7	15.1	16.5	21.3
C	3.37	3.75	4.12	4.62	5.12	6.18
D	30°	30°	22.5°	22.5°	18°	18°
E	15°	15°	11.2°	11.2°	9°	9°
F	4	4	4	4	4	4
	1.0	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8
G	17.0	18.7	21.2	22.7	25.0	29.5
J	6.5	6.5	7.3	7.3	7.8	7.8
L	2.8	2.8	3.3	3.3	3.5	3.5
M	2.4	2.4	3.0	3.0	3.4	3.4
N	2.5	2.5	3.8	3.8	4.8	4.8
P	5.3	5.3	6.3	6.3	8.2	8.2
R	8.8	8.8	10.7	10.7	12.3	12.3
S	11.4	13.0	15.0	17.0	19.0	23.0
ACTUATOR	ATV-1	ATV-1	ATV-2	ATV-2	ATV-3	ATV-3
WEIGHT (LBS)	233	305	453	514	649	789



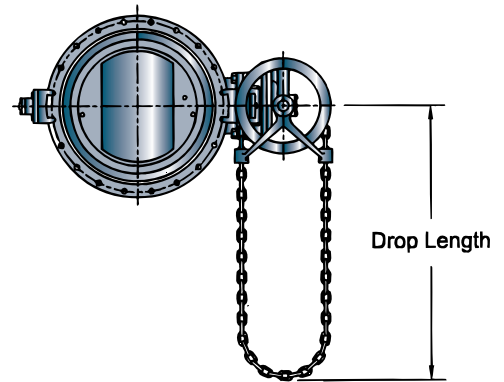
AWWA VALVE ACCESSORIES

TYPICAL VALVE ACCESSORIES

Input Extension & 2 in. Drive Nut

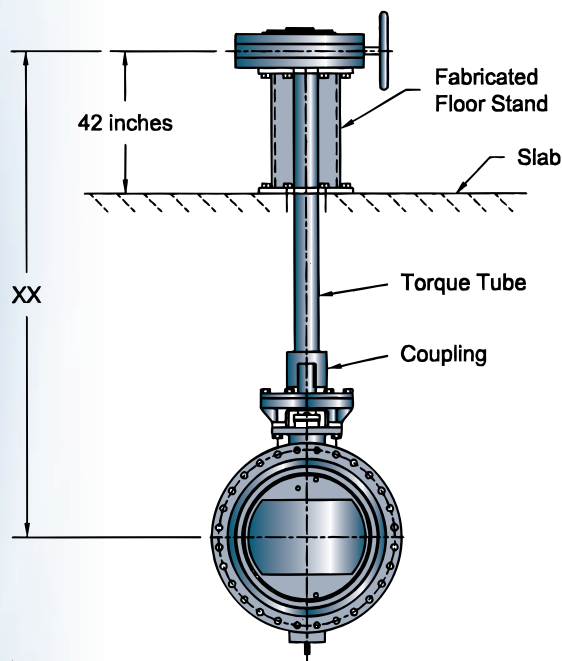


Chainwheel

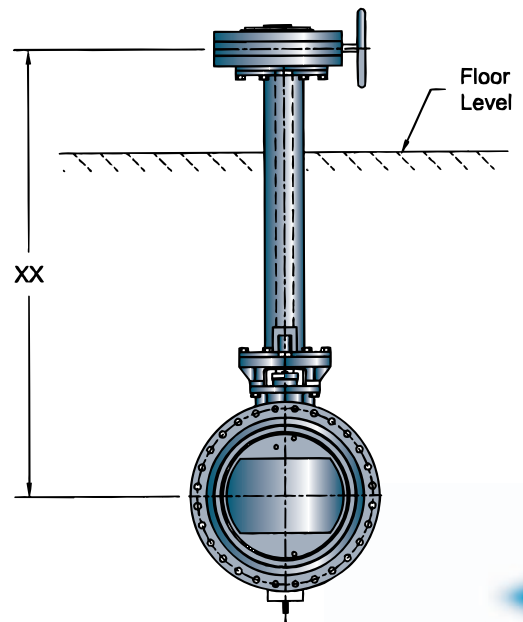


Note:
Chain Length = 2 X Drop Length + Diameter of Chainwheel

Torque Tube Extension Floor Stand & Gear



Bonnet Extension



AWWA BUTTERFLY VALVES FLOW GRAPH

BUTTERFLY VALVES FLOW GRAPH

This graph shows the relationship between valve size, flow rate, velocity, disc degree open and pressure drop, based on a fluid temperature of 60° F. The use of this graph is explained with the following example:

Determine the pressure drop and velocity of a 42 inch size valve with a flow rate of 35,000 Gal/Min and a disc position of 60° open.

STEP 1

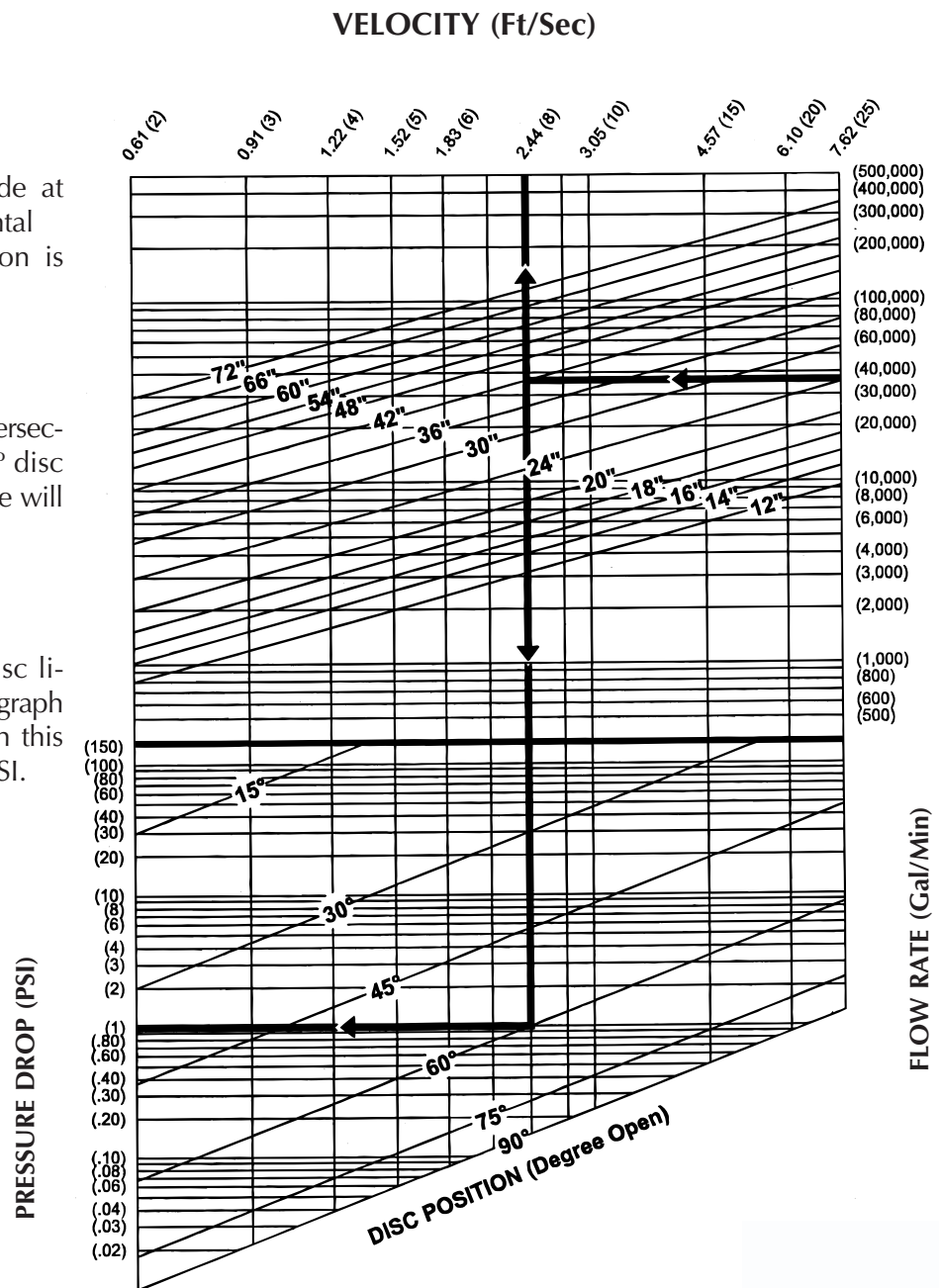
Enter the graph from the right side at 35,000 Gal/Min and draw a horizontal line to the left until an intersection is made with the 42 inch valve size.

STEP 2

Draw a vertical line through this intersection to the top and down to the 60° disc line. The intersection with the top line will provide the velocity of 8 Ft/Sec.

STEP 3

From the intersection of the 60° disc line, draw a horizontal line left to the graph edge and read the pressure drop. In this example the pressure drop is 1.0 PSI.



WAFER BODY DUAL-PLATE CHECK VALVES

2 to 54 inch, Figures 12HMP Class 125 & 25HMP Class 250

AWWA WAFER DUAL-PLATE CHECK VALVES

Specifications

- Wafer Body
- Spring Loaded
- Non-Slam Closure
- Metal to BUNA N Seated
- In Accordance with API 594 & ANSI B16.1 Specifications

Service Features

- General Service and Heavy Duty Valves for Preventing Flow Reversal of Fluid.
- Valves can be Installed Horizontally, or Vertically for upward Flow
- Full Close to Open with Little Pressure

Typical Walworth Valve Specifications

Walworth Wafer Dual-Plate Check Valves for water service. Wafer type body designed to fit between flanges ANSI B16.1 classes 125 or 250. Spring loaded to shut the valve plates before reverse flow starts, acting at a point of zero velocity, for non-slam closure. Suitable for mounting either horizontally or in vertical lines with upward flow under the plates. These valves are manufactured with the following basic materials:

LIST OF MATERIALS

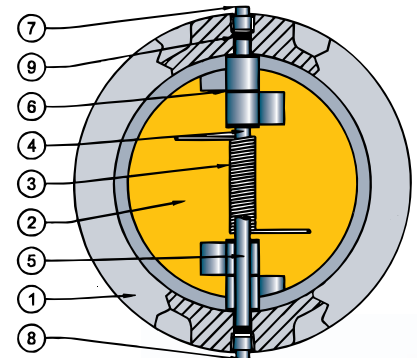
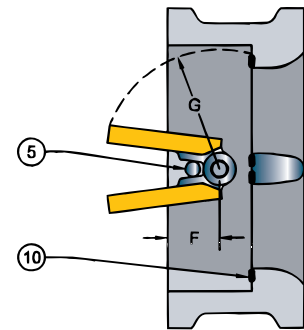
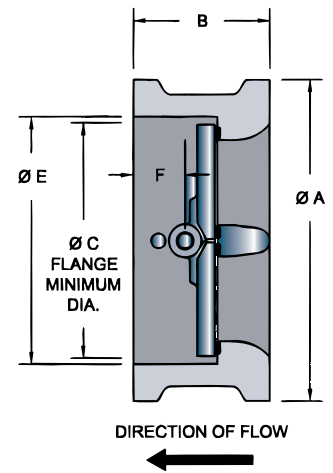
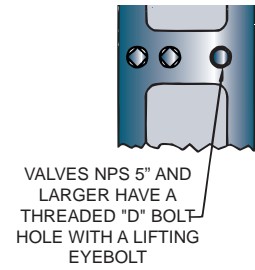
No.	DESCRIPTION	MATERIAL	ASTM
1	Body	Cast Iron	A 126 CL B
2	Plate	Bronze	B 62
3	Spring	Stainless Steel	A 313 Type 316
4	Plate Hinge Pin	Stainless Steel	A 276 Type 316
5	Plate Stop Pin	Stainless Steel	A 276 Type 316
6	Plate Thrust Bushings	Stainless Steel	A 276 Type 316
7	Hinge Pin Retainer	Steel	A 108
8	Stop Pin Retainer	Steel	A 108
9	Stabilization Cone	Buna N	D2000
10	Body Seat	Buna N	D2000

Note: Other Materials Available Upon Request.

ANSI DIMENSIONS

SIZE	CLASS	FACE	A	B	C	D	E	F	G
2"	125	FF	4-1/8	2-1/8	2-1/32	NONE	2-3/8	5/8	1-1/16
	250	RF	4-3/8	2-1/8	1-15/16	NONE	2-3/8	7/8	1-1/16
2 1/2"	125	FF	4-7/8	2-1/8	2-15/32	NONE	2-7/8	3/4	1-5/16
	250	RF	5-1/8	2-3/8	2-11/32	NONE	2-7/8	1	1-5/16
3"	125	FF	5-3/8	2-1/4	3-1/16	NONE	3-1/2	3/4	1-5/8
	250	RF	5-7/8	2-5/8	2-29/32	NONE	3-1/2	1-1/16	1-5/8
4"	125	FF	6-7/8	2-1/2	4	NONE	4-1/2	1	2-1/16
	250	RF	7-1/8	2-3/8	3-53/64	NONE	4-1/2	1-3/16	2-1/8
5"	125	FF	7-3/4	2-3/4	5	3/8 - 16	5-1/16	15/16	2-9/16
	250	RF	8-1/2	3-1/4	4-13/16	3/8 - 16	5-1/16	1-1/2	2-9/16
6"	125	FF	8-3/4	3	6-1/16	1/2 - 13	6-5/8	1-1/8	3-1/16
	250	RF	9-7/8	3-3/4	5-47/64	1/2 - 13	6-5/8	1-9/16	3-3/32
8"	125	FF	11	3-3/4	7-31/32	1/2 - 13	8-5/8	1-9/16	4
	250	RF	12-1/8	5	7-5/8	1/2 - 13	8-5/8	1-7/8	4-1/32
10"	125	FF	13-3/8	4-1/4	10	5/8 - 11	10-3/4	1-5/16	4-15/16
	250	RF	14-1/4	5-1/2	9-9/16	5/8 - 11	10-3/4	1-15/16	4-31/32
12"	125	FF	16-1/8	5-5/8	11-15/16	3/4 - 10	12-3/4	1-11/16	5-15/16
	250	RF	16-5/8	7-1/8	11-3/8	3/4 - 10	12-3/4	2-3/4	5-31/32
14"	125	FF	17-3/4	7	12-1/2	3/4 - 10	14	3-5/16	6-13/16
	250	RF	19-1/8	8-3/4	12-1/2	3/4 - 10	14	3-1/2	6-7/8
16"	125	FF	20-1/4	8-1/4	15	1-8	16	2-7/16	7-17/32
	250	RF	21-1/4	9-1/8	14-5/16	1-8	16	3-9/16	7-5/8
18"	125	FF	21-5/8	7-1/8	16-7/8	1-8	18	2-11/16	8-11/16
	250	RF	23-1/2	10-3/8	16-7/8	1-8	18	4	8-3/4
20"	125	FF	23-7/8	8-3/8	18-15/16	1-8	20	3-1/4	9-1/2
	250	RF	25-3/4	11-1/4	17-15/16	1-8	20	4-5/8	9-3/4
24"	125	FF	28-1/4	8-3/4	22-5/8	1-8	24	3-1/8	11-1/4
	250	RF	30-1/2	12-1/2	21-9/16	1-8	24	4-7/8	11-11/32
30"	125	FF	34-3/4	11-1/8	29-1/4	1-8	30	3-1/2	14-3/4
	250	RF	37-1/2	14-1/2	28-3/4	1-8	30	4-1/16	14-5/16
36"	125	FF	41-1/4	14	35	1-8	36	4-1/2	17-1/4
	250	RF	44	18-7/8	35	1-8	36	5-3/4	17-3/8
42"	125	FF	48	17	41	1-1/2 - 6	42	5-1/4	20-3/4
	250	RF	50-3/4	21-1/8	41	1-1/2 - 6	42	5-7/16	20-9/16
48"	125	FF	54-1/2	20-5/8	47	1-1/2 - 6	48	7	23-3/4
	250	RF	58-3/4	24-3/4	47	1-1/2 - 6	48	6-13/16	23-9/32
54"	125	FF	61	21-1/4	51-1/2	1-1/8 - 8	54	6-3/4	26-11/32
	250	RF							

• FF – FLAT FACE • RF – RAISE FACE



This view is Rotated 90° to Show the Actual Operating position of the valve. The pin must be vertical for horizontal flow.

FLANGED ENDS, CLASS 125 2 to 24 INCH SIZES

AWWA SWING CHECK VALVES

Figures

- W928F IBBM
- W929F IBBM Buna N Disc
- W932F IBBM W / Lever & Weight
- W933F IBBM W / Lever & Spring
- W929F LW IBBM Buna N Disc W / Lever & Weight
- W929F LS IBBM Buna N Disc W / Lever & Spring

Specifications

- Metal to Metal Seated or Metal to Buna N Seated
- Full Flanged Body
- Bolted Cap
- Black Flow Prevention
- Full Waterway as defined by AWWA C508
- Clear Waterway also available upon request

Service Features

- Internal Parts Readily Accessible
- End to End dimensions Conform to ASME/ANSI B16.10
- Flanged Ends Conform To ASME/ANSI B16.1 Class 125 Pressure ratings
- The working water pressure shall be 200 psig for 2 to 12 in. Sizes and 150 psig for 14 to 24 in. sizes

LIST OF MATERIALS

No.	DESCRIPTION	FIG	MATERIAL	ASTM
1	Body	W928F	Cast Iron	A 126 CL B
2	Cap	W929F	Cast Iron	A 126 CL B
3	Cap Bolt	W929F-LW	Steel	A 307 GR B
4	Cap Bolt Nut	W929F-LS	Steel	A 307 GR B
5	Cap Gasket	W932F	Non Asbestos	Commercial
6	Hinge	W933F	Ductile Iron	A 536 65-45-12
7	Hinge Pin		Stainless Steel	A 276 Type 304
8	Plain Washer		Steel	Commercial
9	Seat Ring		Bronze	B 62
10	Disc	W928F	Cast Iron (4 - 24 in)	A 126 CL B
		W932F	Bronze (2 - 3 in)	B 62
		W933F	Bronze (4 - 24 in)	B 62
11	Disc Ring		Steel	Commercial
12	Lock Washer		Steel	A 307 GR B
13	Disc Bolt		Steel	A 307 GR B
14	Disc	W929F	Buna N	D 2000
15	Disc Holder	W929F-LW	Ductile Iron	A 536 65-45-12
16	Disc Bolt	W 929F-LS	Steel	A 307 GR B
17	Spider		Ductile Iron	A 536 65-45-12
18	Cotter Pin		Steel	A 307 GR B
19	Disc Stud Nut		Steel	A 307 GR B
20	Lever	W933F	Ductile Iron	A 536 65-45-12
21	Lever Set Screw	W 932F	Steel	A 307 GR B
22	Lever Key	W929F-LW	Steel	A 108 1018
23	Hinge Key	W929F-LS	Steel	A 108 1018
24	Weight	W932F	Cast Iron	A 126 CL B
25	Weight Set Screw	W929F-LW	Steel	A 307 GR B
26	Spring	W933F	Galvanized Steel	A 229
27	Spring Bracket	W929F-LS	Steel	A 307 GR B

Typical Walworth Valve Specifications

Body: Flanged valve bodies shall be of cast iron ASTM A126, Class B. Flanges shall be to ANSI B16.1, Class 125. Body Seat Ring shall be of Bronze ASTM B62 material, and mechanically retained within the valve body.

Disc: Valve Disc shall be of cast iron ASTM A126, Class B. Disc Seat shall be of Bronze, B62 material, and mechanically joined to the Valve Disc.

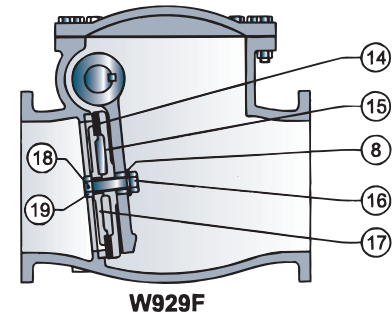
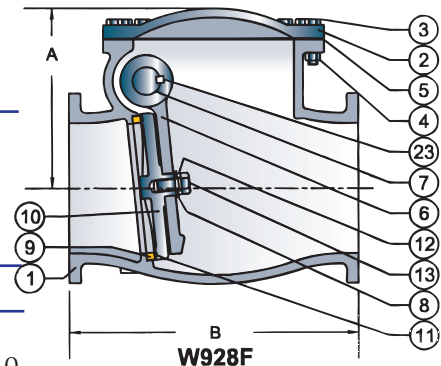
Bolting: Valve Bolting shall be steel, ASTM A307, Grade B material.

Side Plugs: Where used, Side Plugs shall be ductile iron or brass

Testing: Testing of valves shall be in compliance with MSS-SP-71 and AWWA C508 test specifications.

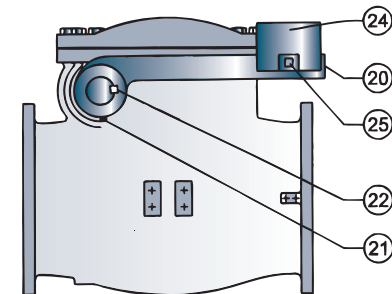
Outside Lever & Weight or Lever & Spring

Due to certain design considerations, the user may request valves that are assisted or dampened with outside lever and weight or spring. Outside levers necessitate changing valve design to utilize a shaft through a stuffing box and packing arrangement. This results in the use of a stronger shaft and relocation of the bearings.

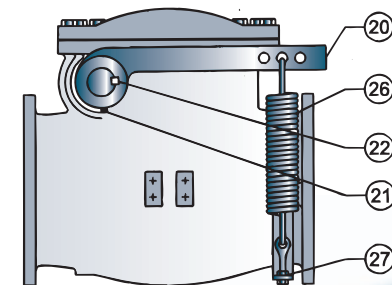


DIMENSIONS & WEIGHT

NOMINAL SIZE	A	B	WEIGHT
2	4.8	8	28
2.5	5.6	8.5	41
3	6	9.5	50
4	8	11.5	91
5	8.9	13	104
6	9.8	14	166
8	11.4	19.5	311
10	13.1	24.5	489
12	15.3	27.5	636
14	16.9	31	1060
16	19.1	36	1500
18	24	38	1970
20	27.6	42	2590
24	31	46	3840



W932F & W929F-LW



W933F & W929F-LS

FULL FLANGED 6 TO 48 INCH SIZES

Figures: RCH12 Class 125, RCH15 Class 150, RCH25 Class 250

ROTOCHECK CHECK VALVES

Specifications

- Metal to Metal seated
- Full flanged body
- High Cv's from large Flow area thru seats
- Minimum pressure drop from body and disc streamlined arrangement
- Non-Asbestos packing and gaskets
- Non-Slam closure
- ANSI B16.1 Class 125 and Class 250 and ANSI B16.5 Class 150 Flanges

Service Features

- General service and heavy duty valves for preventing flow reversal of fluid. Valves can be installed horizontally or vertically for upward flow
- Full close to open with little pressure and minimum disc stroke (40°)
- Minimal turbulence flow pattern
- When high reverse pressure heads and pressure surge are anticipated valves can be equipped with special disc restraining dashpots to control closure
- Self lubricating, non-galling shaft & bearings

Typical Walworth Valve Specifications

Walworth Specifications cover Metal Seated, Full Flanged Body, Tilting Disc Rotocheck Valves with ANSI 125, 150 or 250 Flanged Ends. Applicable Standards from MSS and AWWA shall apply to these Valves. Valves shall have a Flow Area minimum 40% greater than Nominal Pipe Size through Valve Seat.

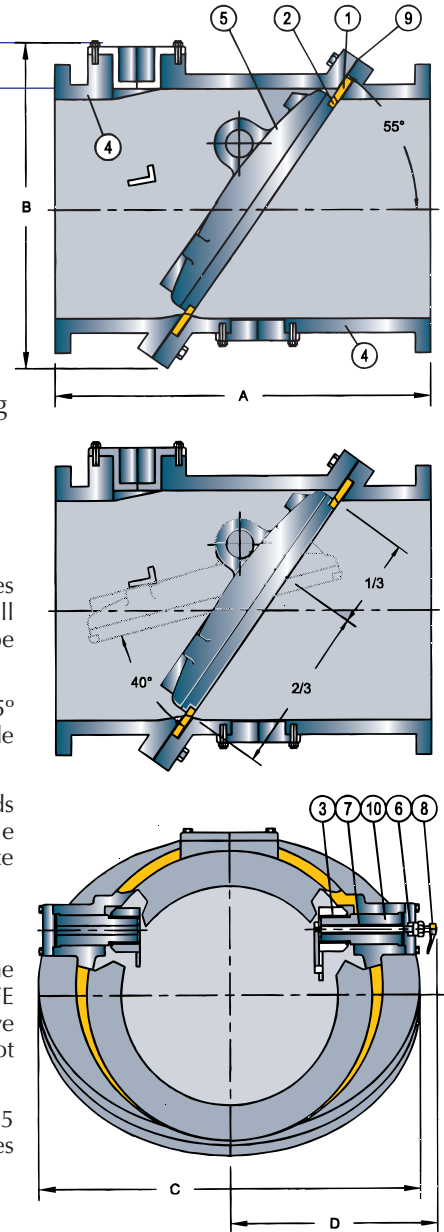
Body: Valve housing shall consist of two body sections bolted together at a central, 55° diagonal inclined flange. Body shall be of cast iron, ASTM A126 GR B for Class 125 Valves, or ductile iron, ASTM A536 GR 65-45-12 for Classes 150 and 250 Valves.

Disc: Valve discs shall rotate on an offset plane with approximate one-third to two-thirds proportion. Disc Seat shall be mechanically secured to the disc. Disc material shall be ductile iron, ASTM A536 GR 65-45-12. Disc seat material shall be Bronze ASTM B62, Aluminum Bronze ASTM B 271 or Stainless Steel ASTM A167 Type 304.

Shaft: The Valve Shaft shall be two piece Stainless Steel, ASTM A276 Shafts.

Bearings (Trunnions): Standard valve discs shall have in-line pivot trunnions about which the disc shall rotate. Bearing material shall be bronze ASTM B62, or grade or phenolic backed PTFE material capable of withstanding pressure loads not to exceed one-fifth of the compressive strength of the bearing or the shafts. Bearing of similar material as the shaft material shall not be permitted.

Testing: Valve bodies shall be subject to hydrostatic pressure equivalent to minimum 1.5 times their rated pressure. Seat test shall be 150 PSIG for Class 125 and 300 PSIG for Classes 150 and 250 valves.



DIMENSIONS IN INCHES

NOMINAL SIZE	A	B	C	D	Weight Class 125
6	19.5	16.0	19.0	11.0	270
8	19.5	16.0	19.0	11.0	300
10	24.5	18.0	23.0	13.0	525
12	24.0	21.0	24.0	14.0	625
14	30.0	23.8	27.0	15.5	900
16	30.0	26.8	30.0	17.5	1200
18	33.0	29.3	34.0	19.5	1400
20	32.0	31.8	37.0	20.5	1750
24	38.0	36.5	45.3	23.5	2700
30	52.0	43.8	52.9	28.5	4900
36	59.5	51.0	61.8	33.0	7500
42	62.5	60.0	76.5	39.3	10500
48	65.0	68.3	79.0	42.5	13800

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL	ASTM
1	Body Seat	Bronze	B 62
2	Disc Seat	Bronze	B 62
3	Pivot Pin Bushing	Reinforced PTFE	Commercial
4	Body Class 125	Cast Iron	A 126 GR B
	Classes 150 & 250	Ductile Iron	A 536 65-45-12
5	Disc	Ductile Iron	A 536 65-45-12
6	Packing	Non Asbestos	Commercial
7	Indicator Shaft	Brass	B 16
8	Indicator	Bronze	B 62
9	Body Gasket	Non Asbestos	Commercial
10	Pivot Pin	Stainless Steel	A 276 Type 304

• Other Materials Are Available Upon Request.

FULL FLANGED, WITH TOP OR BOTTOM MOUNTED OIL DASHPOT 6 TO 48 INCH SIZES

ROTOCHECK CHECK VALVES

Figures

- RCH12T, RCH15T & RCH25T, Classes 125, 150 & 250 With Top Mounted Oil Dashpot
- RCH12B, RCH15B & RCH25B, Classes 125, 150 & 250 With Bottom Mounted Oil Dashpot

Typical Walworth Valve Specifications

When high reverse pressure heads and pressure surges are anticipated, valves can be equipped with special disc restraining dashpots to control opening and/or closing speeds.

RCHT. Walworth tilting disc type Rotocheck valves with top mounted oil dashpot assembly. The inherent ease-of-operation of our tilting disc type Rotocheck valves and the addition of our top-mounted oil dashpot system eliminates the necessity of an outside lever system. A top-mounted oil dashpot consists of an independently sealed hydraulic system and cylinder linkage allowing controlled speeds for opening and closing the Rotocheck valve. An open bracket assembly separates the hydraulic cylinder system from the valve fluid.

Opening and closing strokes are independently controlled. Each stroke has an adjustable speed control valve to allow the end-user to select and adjust both the opening and closing rates. Additionally, the final 10% of closure is independently adjustable through the internal cushion check needle adjustment built into the standard JIC cylinder.

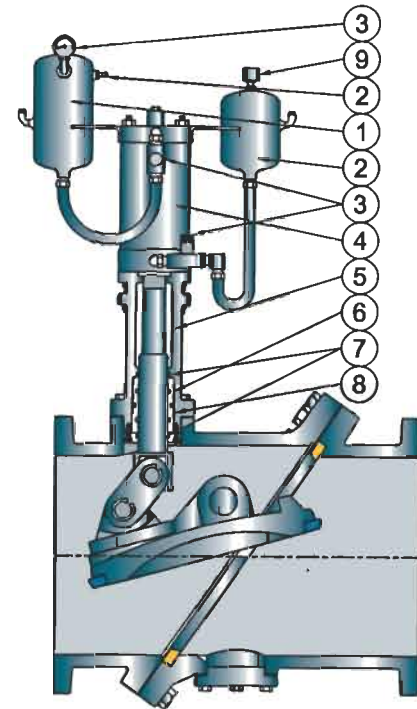
The hard piping system consists of double acting cylinder, two adjustable flow control valves and one air-over-oil accumulator tank, complete with pressure gauge and pneumatic quick coupling valve for opening cycle. The closing cycle oil reservoir may be open to atmosphere and includes an oil filter plug and air breather cap.

The dashpot shaft seal is accomplished by using a bronze bushing and three polypak seals. Separation of the systems is further assured by utilizing an open bracket between the cylinder damper and the valve waterway.

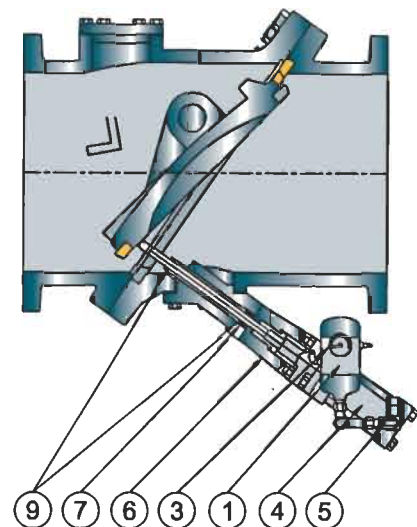
RCHB. Walworth tilting disc type Rotocheck valves with bottom mounted oil dashpot assembly. The bottom mounted oil dashpots are not directly connected to the disc and allows it to open fully without interference and close freely for 90% of its stroke. At this point, the disc will contact the dashpot cylinder rod and an internal cushion check needle built into the cylinder can adjust control speed of its final 10% closing stroke.

A bottom-mounted oil dashpot consists of an independently sealed hydraulic system and cylinder. The bottom-mounted oil dashpot is installed in the bottom inspection port of the Rotocheck Valve.

The hard piping system consists of double acting cylinder, an adjustable flow control valve and an air-over-oil accumulator tank, complete with pressure gauge and pneumatic quick coupling valve for closing cycle.



**RCHT
Top Mounted
Oil Dashpot**



**RCHB
Bottom Mounted
Oil Dashpot**

LIST OF MATERIALS

No.	DESCRIPTION	MATERIAL / ASTM
1	Pressurized Oil Accumulator	Carbon Steel/A 120
2	Air Inlet Valve	Stainless Steel/A 276 Type 304
3	Pressure Gauge	Commercial
4	Double Acting Cylinder	Commercial
5	Flow Control Valves	Commercial
6	Dashpot Spacer	Cast Iron/A 126 CL B
7	Dashpot Space Bushing	Bronze/B 62
8	Polypak Seal	Commercial
9	Rod wiper	Molythane
10	Non-Pressurized Oil Accumulator	Stainless Steel/A 240 Type 304
11	Breather/Filter	Commercial

APPLICABLE STANDARDS AND CODES

• AWWA STANDARDS – AMERICAN WATER WORKS ASSOCIATION

ANSI – AWWA C110/A21.10	Ductile-Iron and Gray-Iron Fittings, 3 in. Through 48 in., for Water and Other Liquids.
ANSI – AWWA C111/A21.11	Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
ANSI – AWWA C207	Steel Pipe Flanges for Water Works service, 2 in. Through 24 in.
ANSI – AWWA C504	Rubber Seated Butterfly Valves.
ANSI – AWWA C508	Swing-Check Valves for Water Works service, 2 in. Through 24 in.
ANSI – AWWA C540	Standard for Power-Actuating Devices for Valves and Sluice Gates.
ANSI – AWWA C606	Grooved and Shouldered Joints.

• ASME STANDARDS – ASME INTERNATIONAL (AMERICAN SOCIETY OF MECHANICAL ENGINEERS)

ASME / ANSI B16.1	Cast- Iron Pipe Flanges and Flanged Fittings.
ASME / ANSI B16.5	Pipe Flanges and Flanged Fittings.
ASME / ANSI B16.10	Face-to-Face and End-to-End Dimensions of Valves
ASME / ANSI B16.34	Valves-Flanged. Threaded and Welding End.
ASME / ANSI B16.42	Ductile Iron Pipe Flanges and Flanged Fittings, Classes 150 and 300.
ASME / ANSI B18.2.1	Square and Hex Bolts.
ASME / ANSI B18.2.2	Square and Hex Bolts and Screws inch series.

• API STANDARDS – AMERICAN PETROLEUM INSTITUTE

API 594	Wafer and Wafer-Lug Check Valves.
API 598	Valve inspection and Testing.

• MSS STANDARDS – MANUFACTURERS STANDARDIZATION SOCIETY

MSS SP-6	Standard Finishes for Contact Faces of Pipe Flanges and Connecting-End Flanges of Valves and Fittings.
MSS SP-9	Spot Facing for Bronze, Iron and Steel Flanges.
MSS SP-25	Standard Marking System for Valves, Fittings, Flanges and Unions.
MSS SP-44	Steel Pipe Line Flanges.
MSS SP-45	Bypass and Drain Connections.
MSS SP-55	Quality Standard for Steel Castings for Valves, Flanges and Fittings and Other Piping Components – Visual Method for Evaluation of Surface Irregularities.
MSS SP-67	Butterfly Valves.
MSS SP-71	Cast Iron Swing Check Valves, Flanges and Threaded Ends.
MSS SP-91	(R 96) Guidelines for Manual Operation of Valves.
MSS SP-92	R 92) MSS Valves User Guide.

• ASTM – AMERICAN SOCIETY FOR TESTING AND MATERIALS

ASTM A27	Standard Specification for Carbon-Steel Castings for General Application.
ASTM A36	Standard Specification for Structural Steel.
ASTM A47	Standard Specification for Ferritic Malleable Iron Castings (Metric).
ASTM A49	Standard Specification for Gray Iron Castings.
ASTM B61	Standard Specification for Steam or Valve Bronze Castings.
ASTM B62	Standard Specification for Composition Bronze or Ounze Metal Casting.
ASTM A108	Standard Specification for Steel Bars, Carbon, Cold-Finished, Standard Quality.
ASTM B117	Standard Test Method of Salt Spray (Fog) Testing.
ASTM A126	Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
ASTM B127	Standard Specification for Nickel-Copper Alloy (UNS N04400)
ASTM B148	Standard Specification for Aluminum-Bronze Sand Castings.

APPLICABLE STANDARDS AND CODES

ASTM A153	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
ASTM B154	Standard Test Method for Mercurous Nitrate Test for Copper and Copper Alloys.
ASTM B160	Standard Specification for Nickel Rod and Bar.
ASTM A165	Electrodeposited Coatings of Cadmium on Steel (discontinued).
ASTM A167	Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
ASTM A216	Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High Temperature Service.
ASTM A240	Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels.
ASTM A242	Standard Specification for High-Strength Low-Alloy Structural Steel.
ASTM A276	Standard Specification for Stainless and Heat-Resisting Steel Bars and Shapes.
ASTM A307	Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
ASTM A395	Standard Specification for Ferritic Ductile Iron Pressure Retaining Castings for Use at Elevated Temperatures.
ASTM D429	Standard Test methods for Rubber Property – Adhesion to Rigid Substrates.
ASTM A436	Standard Specification for Austenitic Gray Iron Castings.
ASTM A439	Standard Specification for Austenitic Ductile Iron Castings.
ASTM D471	Standard Test Method for Rubber Property – Effect of Liquids.
ASTM A516	Standard Specification for Pressure Vessel Plates, Carbon Steel, for Moderate and Lower-Temperature Service.
ASTM A536	Standard Specification for Ductile Iron Castings.
ASTM A564	Standard Specification for Hot-Rolled and Cold-Finished Age-Hardening Stainless and Heat-Resisting Steel Bars, Wire, and Shapes.
ASTM B584	Standard Specification for Copper Alloy Sand Castings for General Applications.
ASTM C633	Standard Test Method for Adhesion or Cohesive Strength of Flame Sprayed Coatings.
ASTM A743	Standard Specification for Castings, Iron-Chromium, Iron-Chromium Nickel, and Nickel-Base Corrosion-Resistant for General Applications.
ASTM D1141	Standard Specification for Substitute Ocean Water.
ASTM D1149	Standard Test Method for Rubber Deterioration – Surface Ozone Cracking in a Chamber.
ASTM D2000	Standard Classification System for Rubber Products in Automotive Applications.

• BOILER AND PRESSURE VESSEL CODE:

SECTION II	Parte A – Ferrous Material Specifications.
SECTION II	Parte B – Non Ferrous Material Specifications.
SECTION VIII	Rules for Construction for Pressure Vessels, Division 1 and 2

Designs and materials may change without notice, contact your Walworth representative for specifications update.

TERMS AND CONDITIONS



Acceptance: All quotations for acceptance within 45 days from date of quotation unless extended in writing. In the event a purchase order is placed after this period of time, The Walworth Company reserves the right to requote base prices of all valves offered. All orders and contracts are subject to credit approval and acceptance by The Walworth Company.

Freight: When prices are F.B.O. point of shipment- no freight allowance, Walworth will attempt to route shipments in the method which will result in the lowest cost unless otherwise instructed. All shipments will be freight charges collect except when stipulated on the purchase order in which case the buyer will be invoiced for all transportation charges.

Delivery of material to a common carrier shall be considered to be delivery to Buyer and shall be at Buyer's risk thereafter.

The Buyer shall file claims of loss of or damage to material in transit directly with the carrier.

Prices: There will be added to all prices quoted, any sales, use, occupation, excise or similar tax which Seller may be required to pay or collect in connection with the sale. Seller reserves the right to cancel any order in the event that selling price(s) shall be established by Federal, State or other government regulation with respect to the product(s) covered by the order which shall be lower than the price(s) specified in the order.

Escalation Terms: Price shown in the price schedule reflects the cost in effect at the time of publication.

These prices will remain firm on all products with a quoted delivery of twenty-six (26) weeks or less.

On products which have a schedule delivery of more than twenty-six (26) weeks the goods will be invoiced

Based on the applicable price sheet in effect at the time of shipment. In no event will the invoiced price be less than the price originally quoted.

Purchased Components: (i.e. motors, gearing, etc.) Prices are quoted on supplier price in effect at time of quotation. Actual invoice price may be adjusted in accordance with the supplier's escalation policy.

Deferred Shipments: If for any reason the customer desires to delay shipments more than 30 days after manufacturing complete or to place a hold or stop to the order during the manufacturing cycle. The Walworth Company reserves the right to consider the order cancelled and to invoke cancellation charges per the schedule below.

Cancellation: After order acceptance by Walworth, items or complete orders may be cancelled and buyer will be charged for work performed, based on the following schedule:

Five (5%) percent of price of stock items.

Ten (10%) percent of price of stock items ordered in quantities which exceed normal inventory levels.

Five (5%) percent of price prior to drawing submittal on made to order items.

Fifteen (15%) percent drawing approval, but prior to the start of castings.

Thirty (30%) to Fifty (50%) percent during casting cycle, depending on the state of completion.

Fifty-five (55%) to Seventy-five (75%) during machining and assembly operations, depending on the state of completion.

One hundred (100%) percent after final assembly and test.

Remittances: Remittances must be made to the address indicated on the invoice.

Credit Terms: As quote. Invoices on balances overdue will be subject to a service charge of One and a half (1 1/2 %) percent per month on such indebtedness.

Deliveries: Shipments and deliveries shall at all times be subject to the approval of Seller's Credit Department. If the Buyer shall fail to make any payments according to the terms of the contract, Seller may in addition to and not in limitation of its other rights and remedies, at its option, cancel all or any part of Buyer's incomplete contracts with Seller or may defer shipments or deliveries under Buyer's contracts with Seller except upon receipt of satisfactory security or for cash before shipment.

All schedules of shipment are estimated as closely as possible and Seller will use its best efforts to ship within the time scheduled, but does not guarantee to do so. Schedules commence with the date Seller receives authorization to proceed with the order, subject to the provisions of the next sentence. The order will not be released for manufacture until complete specifications and approved drawings (if drawings approval is required) are received at the plant of manufacture and the estimated schedule of shipment will commence with the date of such receipt.

Seller shall not be liable for any direct, indirect or consequential damage or loss caused by any delay in delivery, regardless of the cause of delay. Without limiting the generality of the foregoing, Seller assumes no responsibility for delays in delivery resulting from fire, flood, accidents riots, strikes, transportation delays, labor or material shortages, existing or future laws, acts of any governmental authority, or any other cause beyond Seller's control. Items offered from stock are subject to prior sale.

Inspection: Final inspection and acceptance of products must be made at the plant facility, unless otherwise provided in the order and/or in agreed upon specifications. Prices do not include charges for special tests or inspections performed at the request of the Buyer, unless called for in the order and/or in agreed upon specifications.

Returns: Permission in writing and return tagging instructions must be obtained from Seller before any goods returned for credit or adjustment will be accepted. Where returned goods are accepted, a minimum charge of Twenty five percent (25%) of the invoice price will be made, plus freight from both directions and costs of reconditioning the material for resale as new.

Warranty: Seller will replace without charge or refund the purchase price of products manufactured by Seller which prove to be defective in material or workmanship, provided in each case that the product is properly installed and is used in the service for which the Seller recommends it and that written claim, specifying the alleged defect, is presented to Seller within one year from date of shipment. Seller shall in no event be responsible for (a) claims for labor, expenses or other damages occasioned by defective products or (b) for consequential or secondary damages. **THE WARRANTY STATED IN THIS PARAGRAPH IS IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED. WITH RESPECT TO WARRANTIES THIS PARAGRAPH STATES BUYER'S EXCLUSIVE REMEDY AND SELLER'S EXCLUSIVE LIABILITY.**

Design, etc.: Seller reserves the right to change design, materials or specifications without notice. There will be a charge for modifying an order after it has been entered when such change or modification results in additional engineering or clerical work for either The Walworth Company or our suppliers.

Minimum Charge: Orders totaling less than \$100.00 (one hundred 00/100 U.S. CY) net will be billed at a minimum charge of \$50.00 (fifty 00/100 U.S. CY)

Note: We reserve the right to correct obvious clerical errors in quotations, invoices and other contracts.



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